



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2  
290 BROADWAY  
NEW YORK, NY 10007-1866

JUL 14 2004

Ms. Carrie Turner  
Assistant Director  
Camden Redevelopment Agency  
City Hall Suite 1300, P.O. Box 95120  
Camden, New Jersey 08101-5120

Dear Ms. Turner:

Attached is the U.S. Environmental Protection Agency's (EPA's) Removal Site Evaluation (RSE) Report for the Barry Bronze Bearing Site in Camden, New Jersey. In response to the City of Camden's January 12, 2004 request, EPA conducted an RSE in April and May 2004. The RSE indicates that conditions at the Site warrant a removal action under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA" or the "Superfund law"). Specifically, lead contamination present at the Site represents a release or threat of release of hazardous substances to the environment as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

EPA intends to mitigate the threat of release of hazardous substances to the environment at the Site and is presently assessing the potential for a Responsible Party (RP) response to perform the necessary removal action under EPA oversight.

If you have any questions regarding the RSE for the Barry Bronze Site please contact Mr. Mark Pane, On Scene Coordinator at (732)-906-6872.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "William McCabe".

f George Pavlou, Director  
Emergency and Remedial Response Division

Attachments

cc: Paul DeCoursey  
Frank Ryan, Esq.  
William Spearman, Camden  
Ken Kloo, NJDEP

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION II**

Date: July 9, 2004

Subject: Removal Site Evaluation for the Barry Bronze Bearing Company Site, City of Camden,  
Camden County, New Jersey

From: Dave Rosoff, On-Scene Coordinator  
Removal Action Branch



To: File

Site I.D. No.: NJC200400018

**REMOVAL ASSESSMENT RANKING: S**

## **I. INTRODUCTION**

The Removal Action Branch (RAB) received a request from the City of Camden in January 2004 to evaluate the Barry Bronze Bearing Company, Inc. Site (Site) for removal action eligibility (Appendix A). The Site is located at 2204 South 7<sup>th</sup> Street in an urban commercial/residential area in the City of Camden, Camden County, New Jersey (Figure 1). Beginning in 1928, the Site was used as a foundry for the casting of bronze metal into various molds. Reportedly, waste foundry sands generated during the bronzing process were used to fill in the surface of Bulson Street, an unimproved city street immediately to the north of the facility. Currently, the facility is vacant but the windows and doors are securely locked. However, trespassing into the building through openings in the roof has occurred occasionally over the last five years.

**There has been and continues to be a release of CERCLA designated hazardous substances at the Site, which is defined as a facility under section 101(9) of CERCLA.** Elevated levels of lead are present in the surface soils on Bulson Street and in the dust and foundry sand within the building due to past operating practices at the Site.

The high concentrations of lead on Bulson Street present an immediate public health concern. Travelers on the street and residents in the nearby residential areas could be exposed to unacceptable levels of this hazardous substance. The City of Camden considers the Site a "Brownfields" candidate and is working with the Site owner to find a private interest willing to reuse the Site.

## **II. SITE CONDITIONS AND BACKGROUND**

### **A. Site Description**

#### **1. Physical Location**

The Barry Bronze Bearing Company (Barry Bronze) facility is located at 2204 South 7<sup>th</sup> Street and occupies Block 604, Lot 1 in the City of Camden (Figure 2). The 0.6 acre Site contains a concrete block/steel industrial building (19,000 square feet) that occupies about 80% of the property. Most of the remainder of the property is covered by an asphalt parking lot. The Site is accessed from 7<sup>th</sup> Street along its western boundary and is bounded to the south by residences on Florence Street, to the east by a large warehouse complex operated by Camden's Department of Education, and to the north by Bulson Street (an unpaved dirt street) and the active Penn Reading Seashore Rail Line (Camden to Winslow Branch). The portion of Bulson Street and the rail line between 7<sup>th</sup> and 8<sup>th</sup> Streets is situated on Block 578, Lot 1 (0.4 acres) (Figure 3). North of Bulson Street is a large vacant parcel owned by the City of Camden that is slated for low income residential development in the near future.

#### **2. Site History**

The Site has been used as a foundry for the casting of bronze metal into various molds by the same family business since 1928. The operation consisted of the melting of copper, lead and tin to make alloys and the molding of these alloys in sand molds and steel jackets (See Appendix B). Heavy metal contaminated foundry sands were a waste product generated by the casting process. Prior to the 1980s, when NJDEP required the drumming and proper disposal of this waste, the contaminated sand was used to fill in potholes on Bulson Street. In July 1999, Barry Bronze treated and disposed of approximately 175 fifty-five gallon drums of heavy metal contaminated foundry sands (approximately 250 tons) that had accumulated on the Site.

Barry Bronze ceased its operations in August 1997 triggering New Jersey Industrial Site Recovery Act (ISRA) requirements (ISRA Case # E97573). In accordance with ISRA a Preliminary Assessment (PA) and Site Investigation (SI) were completed by Barry Bronze in March 1998 and February 1999, respectively. In response to a May 1999 NJDEP ISRA inspection, Barry Bronze performed a limited remedial action to address heavy metal contamination of soils on the Site discovered during the SI. The remedial action work was documented in an August 2000 Site Inspection/Remedial Action Report. A second SI was completed in December 2001 focusing on the air compressor room and the furnace pit inside the building. Based on the results of post-excavation sampling completed by Barry Bronze and on EPA's sampling conducted during this RSE, the remedial work completed at the Site has not adequately addressed the extensive soil/dust contamination inside or outside the building.

The owner of the property has indicated that he cannot afford to continue the ISRA cleanup and would like to give the property to the City of Camden for re-use. The City of Camden would like to accept the property and use it to support another tax paying small commercial business.

However, the City does not want to accept the property until the Site has been completely assessed and remediated so that it can be re-occupied safely.

### 3. Previous Work Relevant to this RSE

The 1999/2000 SI work focused on the investigation of used foundry sand deposition areas along Bulson Street (exterior) and interior soil and dust contamination in the furnace pit and on the foundry room floor. Soil sampling was conducted in these areas and samples were analyzed for TPH, priority pollutant metals and VOCs as deemed appropriate. Analytical results from the SI showed elevated levels of copper and lead in foundry sands used to fill in the road surface on Bulson Street along the north side of the foundry building and in front of the foundry's bay doors. Lead concentrations were found in concentrations above 600 ppm in 22 of 23 surface soil samples collected along Bulson Street and adjacent to the north wall of the foundry building. Building exterior lead concentrations in surface soil ranged from 739 to 27,200 ppm with an average of 7,437 ppm. Interior floor samples showed elevated levels of lead (up to 12,500 ppm) in the foundry room sand floor and TPH (up to 32,700 ppm) in the furnace pit.

### 4. Previous Removal Actions

During the initial RSE Site visit on April 8, 2004, approximately 90 bags of potentially asbestos containing construction debris were observed on Bulson Street adjacent to the Barry Bronze property. The bags had been illegally dumped in this location and were in poor condition. The material in the bags was sampled and results showed that it contained 40% chrysotile friable asbestos. On April 20, 2004, verbal authorization was given to conduct a time critical removal action to address the threat posed by this material. On April 21, 2004 EPA mobilized to the Site and removed the bags and transported them in a double lined roll off container to Pioneer Crossing landfill in Birdsboro, Pennsylvania for disposal. On May 10, 2004 an Action Memorandum was signed documenting the verbal authorization for the removal action.

### 5. Site Assessment Activities/Observations

Several Site visits were conducted in April and May 2004 for this RSE. Currently, the Site includes the vacant Barry Bronze facility and the unpaved (dirt) Bulson Street north of the facility.

The Barry Bronze facility has a front gate that opens to 7th Street and a fence around the perimeter of the property. The fence is breached in a number of locations. The 19,000 square foot building is relatively secure with all of the windows and doors locked. The layout of the building is depicted in Figure 4. The building is structurally sound and continues to have active utility services (electricity, oil heat, municipal water). The building interior is extremely dusty and the dust contains percentage levels of lead.



Access to the interior of the building is restricted, however, occasional trespassing in the building has occurred in recent years and the owner, his employees, meter readers and servicemen access the building periodically.

Bulson Street is 460 feet long and about 60 feet wide. It runs east/west and is accessible as a through street for only one block between 7<sup>th</sup> and 8<sup>th</sup> Streets. In the past (when Barry Bronze was operating), Bulson Street received a significant amount of truck traffic but now it is almost exclusively used by pedestrians. Vehicular traffic is limited to occasional travel time "short cutting" and to the transportation of garbage for the purpose of illegal dumping on the street. Within the confines of the street are a buried gas main, a buried fiber optic cable and the active Penn Reading Seashore Rail Line (Camden to Winslow Branch), formerly owned and operated by Conrail. The rail road tracks bisect Bulson Street almost down its center and a 36 foot easement is in place to accommodate their use.

During the RSE numerous pedestrians and an occasional bicyclist were observed traveling on Bulson Street. Freight trains seem to travel along the tracks at a rate of about 1 per every 2 hours. The significant lead contamination in the soil at the surface of Bulson Street along the northern exterior of the foundry building is accessible to anyone who utilizes the street as a thoroughfare.

The Site is underlain by the Cretaceous merchantville clay which serves as an aquitard in the Potomac-Raritan-Magothy (PRM) aquifer system. The local groundwater flow is estimated to be to the east southeast. There are a number of municipal water system wells within 4 miles of the Site but there are no private domestic well water supplies in the area. There is regional groundwater contamination in Camden, however it is unknown whether the Site has contributed to this contamination. There are no monitoring wells on the property and there has been no groundwater investigation of the Site.

The North Branch of the Newton Creek lies approximately 2,700 feet south west of the Site and flows into the Delaware River. There is no obvious migration route over land from the Site to the river.

An underground #2 fuel oil storage tank (6,000 gallons) was decommissioned (pumped and filled with sand) with NJDEP approval in 1994. The facility is currently heated with oil stored in a 5,000 gallon above ground storage tank in the rear of the property.

#### 5. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant

During the RSE, screening for lead in soil on Bulson Street and foundry sand and dust within the building was conducted at the Site using XRF. A percentage of these samples (approximately 20 to 30%) were analyzed by a laboratory using Inductive-Coupled Plasma (ICP) emission spectroscopy for confirmation. The two data sets were compared to determine their correlation (see the July, 2004 Weston XRF Analysis Report). Three soil samples from Bulson Street were

also analyzed for Toxicity Characteristic Leachate Procedure (TCLP) to determine if the soil is a RCRA characteristic hazardous waste.

The results of the RSE sampling indicate that lead, designated as a CERCLA hazardous substance under 40 CFR Table 302.4, is present at extremely high concentrations inside and outside of the building on the Site.

Dust on the floors, walls and in the ventilation system within the building is grossly contaminated with lead (Table 1.2 and 3, Figures 5 through 8). Samples of building interior dust showed lead up to 23,200 ppm. Wipe samples from the walls showed lead concentrations of up to 54,800 ug/ft<sup>2</sup>. Samples of sand in the foundry room showed lead concentrations up to 17,500 ppm. The persons currently accessing the building are being exposed to the contaminated dust and are also providing a potential avenue for additional lead contamination to migrate from the building to areas off of the Site. Future releases to the outside environment will continue on the clothing and shoes of anyone who enters the building.

As result of operations at the Barry Bronze facility lead has been released to the environment and contaminated Bulson Street. Based on laboratory analyses from the samples collected during the RSE, lead has been identified in the surface soils (0"-6" interval) on Bulson Street at an average concentration of 4,239 ppm. Several samples contained lead at concentrations greater than 10,000 ppm with a high concentration of 42,400 ppm. (Table 1.1 and Figures 9 and 10). Lead concentrations were greatest on Bulson Street near the Barry Bronze facility and are concentrated in the top 2 feet of soil. TCLP results from the soil samples from Bulson Street range between 11.4 and 287 mg/L indicating the lead contaminated soil is a RCRA characteristic hazardous waste (Table 2).

The mechanism for past releases to the environment include air emissions, discharges onto the ground surface, and poor facility operations/waste management practices. The contaminated soil at the ground surface migrates along Bulson street during dry periods when it is entrained in the wind as dust. Rail traffic exacerbates the migration of contamination when the train creates wind which can entrain finer contaminated particles. People have been observed walking and biking through contaminated areas and potentially tracking lead contaminated soil off-Site.

### **III. THREATS TO PUBLIC HEALTH WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

#### **A. Threats to the Public Health or Welfare**

Conditions at the Site meet the requirements of Section 300.415(b) of the National Contingency Plan (NCP) for the undertaking of a CERCLA removal action. Factors from the NCP Section 300.415(b)(2) that support conducting a removal action at the Site include:

**(i) Actual or potential exposure to nearby human populations, animals, of the food chain from hazardous substances, or pollutants, or contaminants;**

There is a potential exposure to hazardous substances by nearby populations from hazardous substances (§300.415(b)(2)(i)). Elevated levels of lead, a CERCLA designated hazardous substance, are present both inside and outside the Barry Bronze facility.

The significant lead contamination in the soil at the surface of Bulson Street along the northern exterior of the foundry building is accessible to anyone who utilizes the street as a thoroughfare. Finer contaminated particles on the street are entrained in the wind as dust. Significant human exposure pathways for the lead include inhalation, dermal contact, and to a lesser degree, ingestion. People utilizing Bulson Street for travel could be exposed to lead contaminated dust and could track lead contamination off-Site. Regular train traffic and infrequent vehicular traffic also can serve to create airborne lead contamination and expose railroad employees and vehicle passengers. Wind can transport airborne lead contaminated dust resulting in off-Site exposure in nearby residential neighborhoods.

Trespassers (persons have been known to illegally enter into the building since it has been unoccupied) or workers involved in interior activities (currently only the maintenance of the building) are exposed to high levels of lead inside the facility. Any unprotected person entering a building with heavy floor dust would disturb the dust and potentially be exposed to suspended particulates containing significant concentrations of lead. The contaminated dust could migrate outside the building on the clothing of people who access the interior of the building.

Lead is a cumulative poison where increasing amounts can build up in the body eventually reaching a point where symptoms and disability occur. Particularly sensitive populations are women of child-bearing age, due to the fetal transfer of lead, and children. Cognitive deficits are associated with fetal and childhood exposure to lead. An increase in blood pressure is the most sensitive adverse health effect from lead exposure in adults. Other symptoms include: decreased physical fitness, fatigue, sleep disturbance, aching bones, abdominal pains, and decreased appetite. Long-term exposure can result in severe damage to the brain, blood-forming organs, and the nervous, urinary and reproductive systems. Effects on the kidney, nervous system and heme-forming elements are associated with increasing blood lead concentrations, both in children and adults. Lead can also be a powerful systemic poison causing severe symptoms with acute exposures. Ingestion and inhalation of large amounts may lead to seizures, coma, and death.

The relationship between soil lead concentrations and the consequent impact on blood levels in children has been studied through numerous epidemiological studies. Based on these epidemiological studies, it is generally believed that persistent exposure to soil-borne lead results in an increase in blood lead levels (in children) of 1 to 9 ug/dl per 1,000 ppm lead in soil. Although this relationship may become less robust as exposure durations decrease and soil lead levels increase, it nonetheless provides compelling evidence of the potential lead hazard associated with the excessive lead concentrations found in the soil at the Site.

**(iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate; and (v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;**

There are high levels of hazardous substances in soils at the surface that may migrate (§300.415(b)(2)(iv)). Analytical testing has confirmed the presence of significantly elevated levels of lead in the surface soil on Bulson Street. During dry conditions this material becomes airborne more readily and during wet conditions it lodges more easily onto tires passing over it. Persons that ride their bicycles or walk on Bulson Street can accumulate the material on their shoes or on the tires and possibly carry it into the home resulting in potential exposures to young children, if present. Trains and vehicular traffic on Bulson Street can also contribute to entraining lead contaminated particles in air and in tracking contaminated soil off-Site. Weather conditions exist that may cause these hazardous substances to migrate or be released (§300.415(b)(2)(v)). Wind can carry lead contaminated dust from the street to off-Site areas, including adjacent residential properties. Rain events may transport lead contaminated soil off-Site with surface run-off.

**(vi) Threat of fire or explosion**

A fire in the Barry Bronze facility containing significant quantities of lead contaminated dust, foundry sand and building materials could result in the generation and release of a large airborne plume of smoke containing high concentrations of lead. This plume could easily migrate off of the Site into neighboring communities causing widespread exposure to high levels of airborne lead.

**(vii) The availability of other appropriate federal or state response mechanisms to respond to the release;**

There are no State/local response actions expected to mitigate the threats to public health or the environment on the Site.

**B. Threats to the Environment**

The amount of migration of lead contaminated soil/dust into the neighboring areas around the Site has not been documented. However, the numerous mechanisms for the migration of the lead contamination off of the Site, and the magnitude of the lead concentrations found in surface soil indicate a significant threat of release to the environment beyond the boundaries of the Site as it has been defined by this RSE.

**V. CONCLUSIONS**

The Barry Bronze Bearing Company Site is considered a facility as defined by Section 300.5 of the NCP. A release of a hazardous substance (lead) has occurred on the Site in a quantity and concentration that has resulted in a substantial threat to the public health and the environment.

There is a current exposure pathway existing to humans and the environment that may present an imminent and substantial endangerment and no other party, government or otherwise, is currently taking a timely response action to mitigate the threat.

The extremely high concentrations of lead present in soil on Bulson Street pose a health threat to unprotected individuals accessing the Site and a potential health threat to individuals residing or working in the vicinity of the Site. The inside of the Barry Bronze facility is highly contaminated with lead in the form of dust and foundry sand. People periodically accessing the building interior creates the potential for the migration of additional contamination to the outside. Any unprotected person entering the building would likely be exposed to airborne dust containing significant concentrations of lead.

## **VI. RECOMMENDATIONS**

Based upon the conclusions presented above, it is recommended that a CERCLA Time-Critical Removal Action be undertaken to mitigate the threats associated with the release of lead contamination at the Site.

cc: Richard Salkie, RAB  
John Witkowski, RAB  
Joe Rotola, RAB  
Jim Daloia, RPB  
George Zachos, Site Assessment Manager  
Mark Pane, OSC

SCALE 1" = 2,000'	DRAWN BY USGS	DATE 12/01
PROJECT 01-479	APP'D BY RTP	DRAWING NO. 1.0

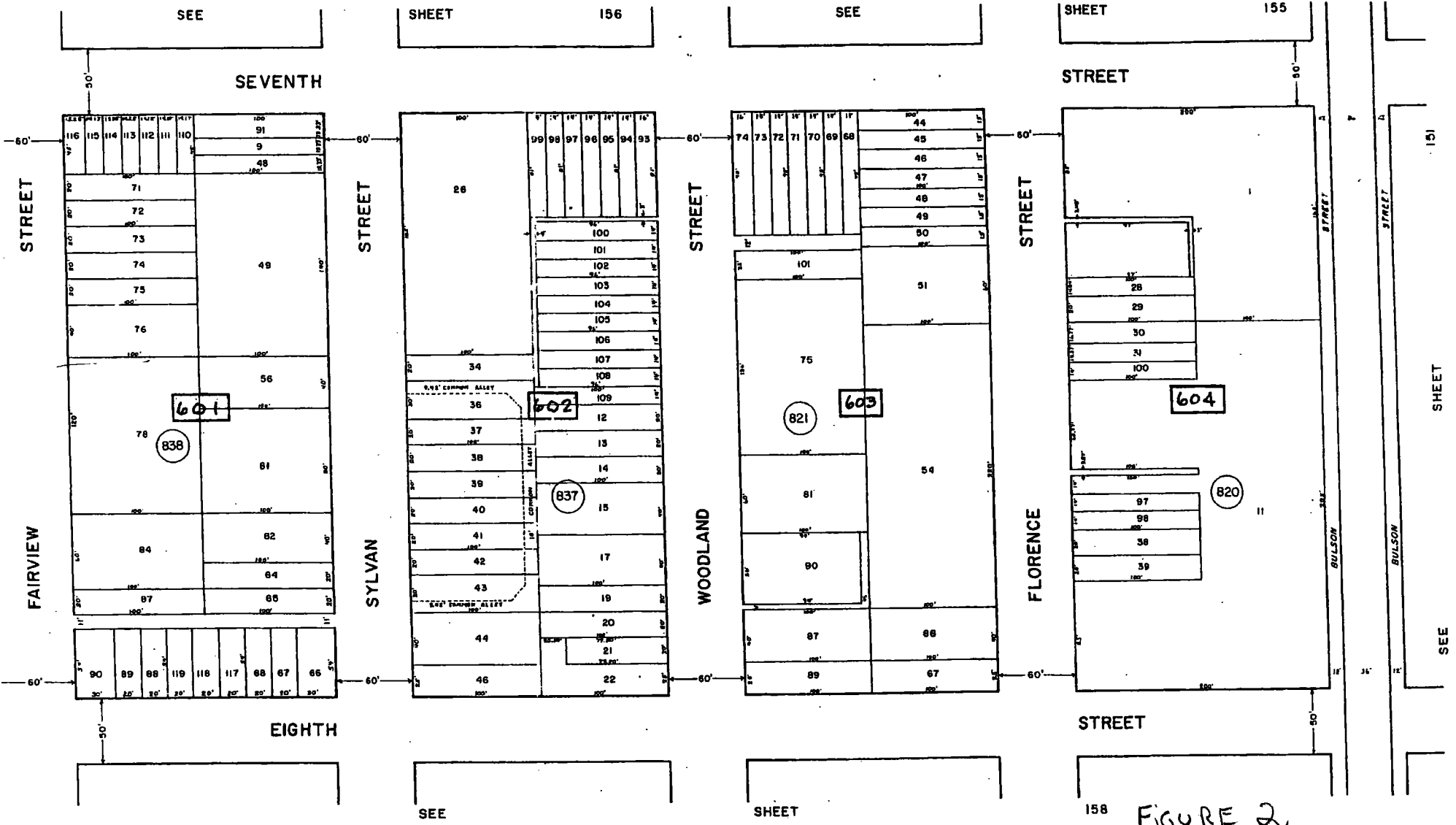


FIGURE 2

NEW JERSEY DEPARTMENT OF THE TREASURY  
DIVISION OF TAXATION  
LOCAL PROPERTY AND PUBLIC UTILITY TAXES  
APPROVED AS A TAX MAP PURSUANT TO THE  
PROVISIONS OF CHAPTER 115, LAWS OF 1974, ETC.  
FOR THE DIRECTOR, DIVISION OF TAXATION  
*John J. Gaffney*  
BY  
L.E. #18434 CHART. ENGINEERED DESIGN  
DATE DEC 18 1977 JERSEY NO. 858

REMINGTON ENGINEERS, INC.  
PENNSAUKEN, NEW JERSEY  
REV. 9-1-66 12-1-51

TAX MAP  
CITY OF CAMDEN  
CAMDEN COUNTY  
SCALE: 1" = 40' 1977  
CHARLES C. SHOEMAKER  
CITY ENGINEER

Block: 604 Prop Loc: 2204 SO 7TH ST Owner: BARRY BRONZE BEARING CO Square  
 Lot: 1 District: 08 CAMDEN CITY Street: 420 GRAISBURY AVE Year Bu  
 Qual: Class: 4B City State: HADDONFIELD NJ Zip: 08033 Bldg:  
 Additional Information

Prior Block: 820 Acct Num: 239880 Addl Lots: EPL Cox  
 Prior Lot: 1 Mtg Acct: Land Desc: 200X125 Statute  
 Prior Qual: Bank Code: 0 Bldg Desc: CBB Initial:  
 Updated: 02/24/03 Tax Codes: Class4Cd: Desc:  
 Zone: Map Page: Acreage: 0.574 Taxes:

Sale Date: 07/26/62 Book: Page: Price: 0NU#: Ratio:  
 Last Sale

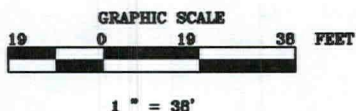
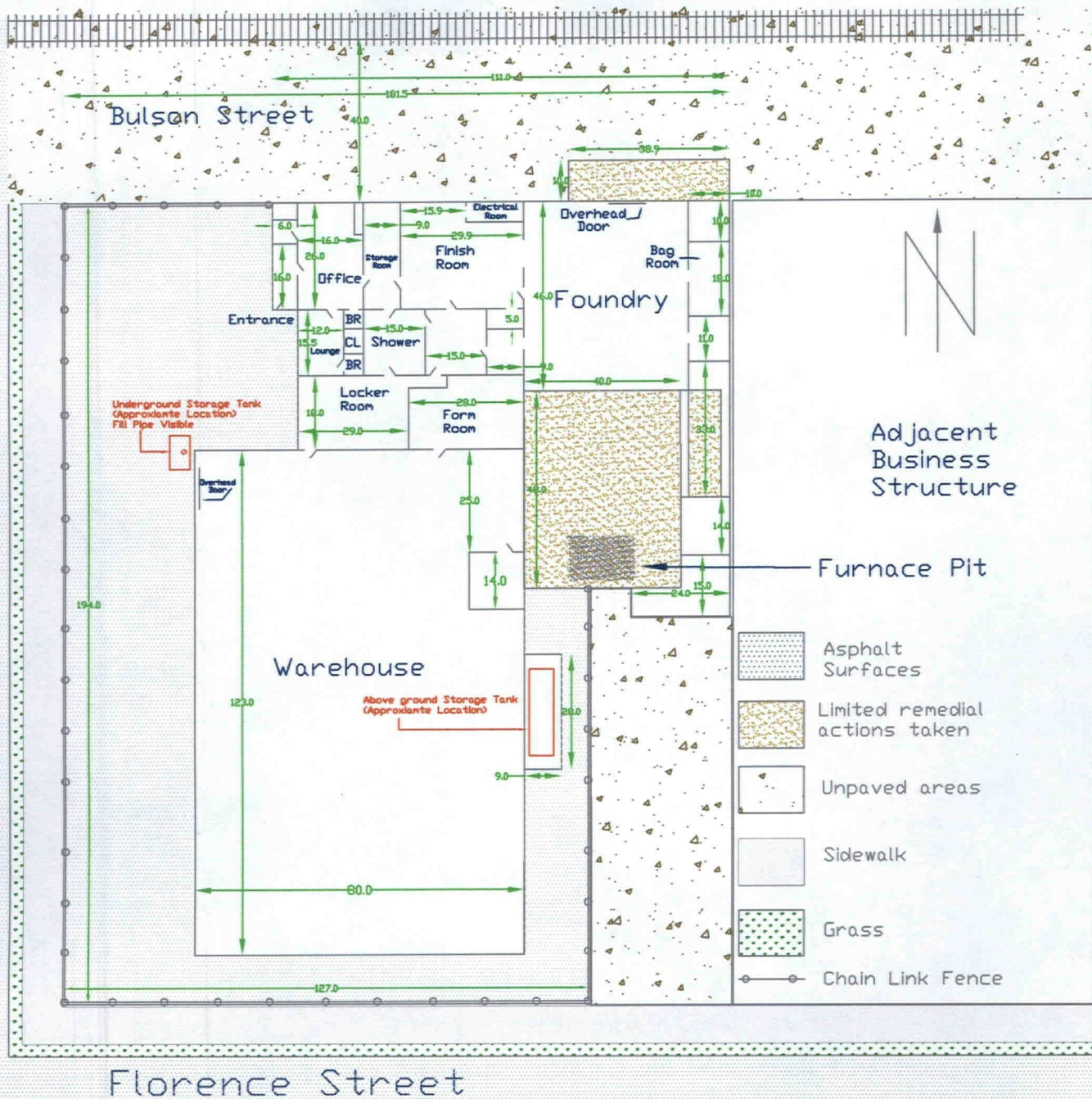
## TAX-LIST-HISTORY

Year	Owner Information	Land/Imp/Tot	Exemption	Assessed
2004	BARRY BRONZE BEARING CO 420 GRAISBURY AVE HADDONFIELD NJ 08033	54800 130600 185400	0	185400
2003	BARRY BRONZE BEARING CO PO BOX 1506 CAMDEN NJ 08101	54800 130600 185400	0	185400
2002	BARRY BRONZE BEARING CO PO BOX 1506 CAMDEN NJ 08101	54800 130600 185400	0	185400





South Seventh Street



Weston Solutions, Inc.  
Federal Programs Division

IN ASSOCIATION WITH  
INNOVATIVE TECHNOLOGICAL SOLUTIONS, INC.,  
SCIENTIFIC AND ENVIRONMENTAL ASSOCIATES, INC.,  
AND TERRANEAR PMC

**FIGURE 4**  
**INTERIOR LAYOUT**  
**BARRY BRONZE BEARING CO. SITE**  
**2204 SOUTH SEVENTH ST**  
**CAMDEN, NEW JERSEY**

US ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL SUPPORT TEAM  
CONTRACT # 68-W-00-113

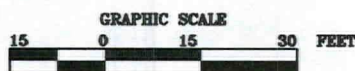
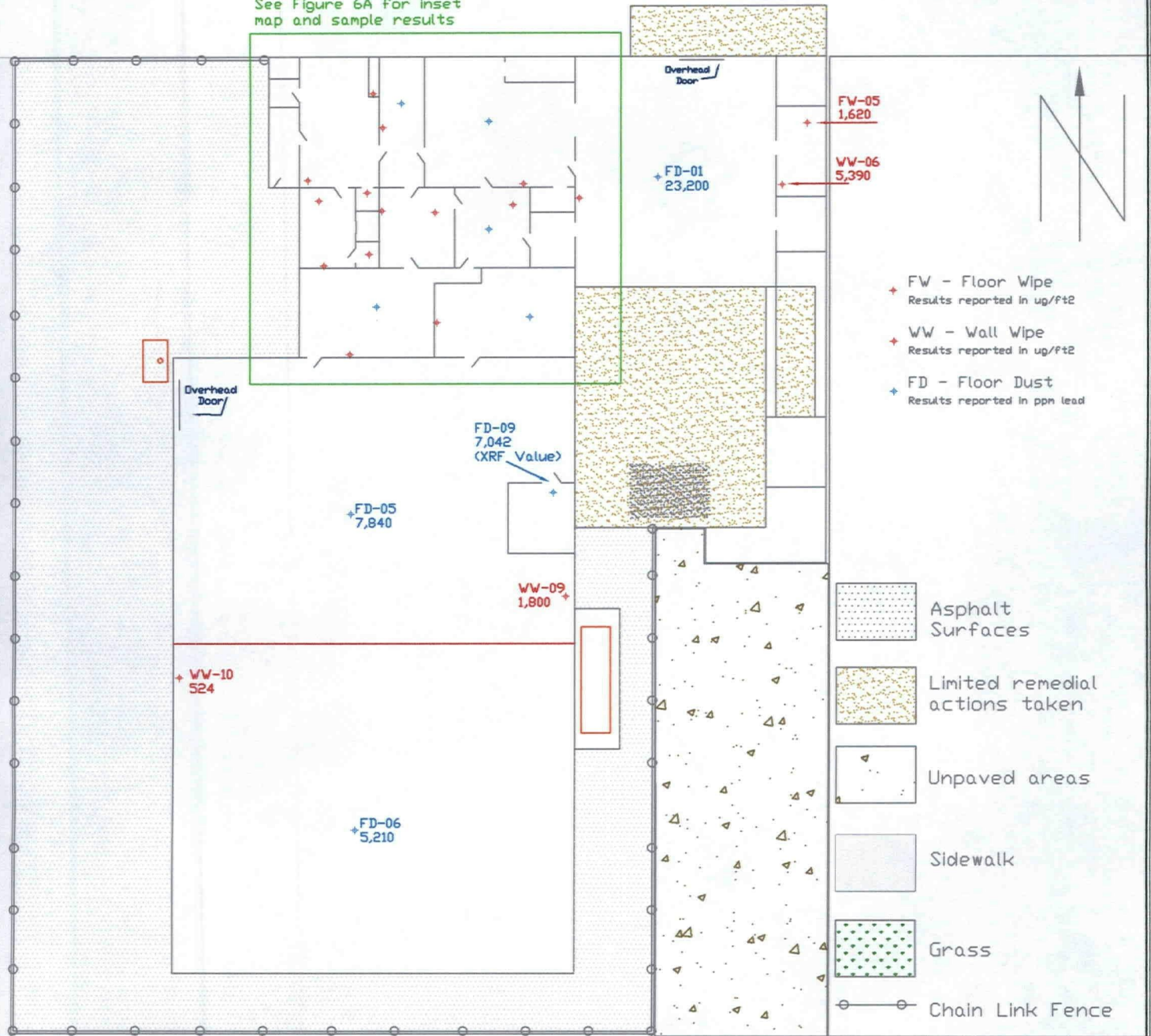
DRAWN BY: T. KISH  
EPA OSC: DAVID ROSOFF  
RST SPM: T. KISH  
FILENAME: BARRYSINTERIORLAYOUT.DWG

DATE MODIFIED 07-01-04



# Bulson Street

See Figure 6A for inset map and sample results



1" = 30'



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Federal Programs Division

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SCIENTIFIC AND ENVIRONMENTAL ASSOCIATES, INC.,  
AND TERRANEAR PMC

FIGURE 5  
INTERIOR SAMPLE LOCATION MAP WITH  
LABORATORY LEAD RESULTS (INSET)  
BARRY BRONZE BEARING CO. SITE  
2204 SOUTH SEVENTH ST  
CAMDEN, NEW JERSEY

US ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL SUPPORT TEAM  
CONTRACT # 68-W-00-113

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EPA OSC: DAVID ROSOFF  
RST SPM: T. KISH  
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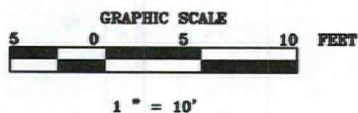
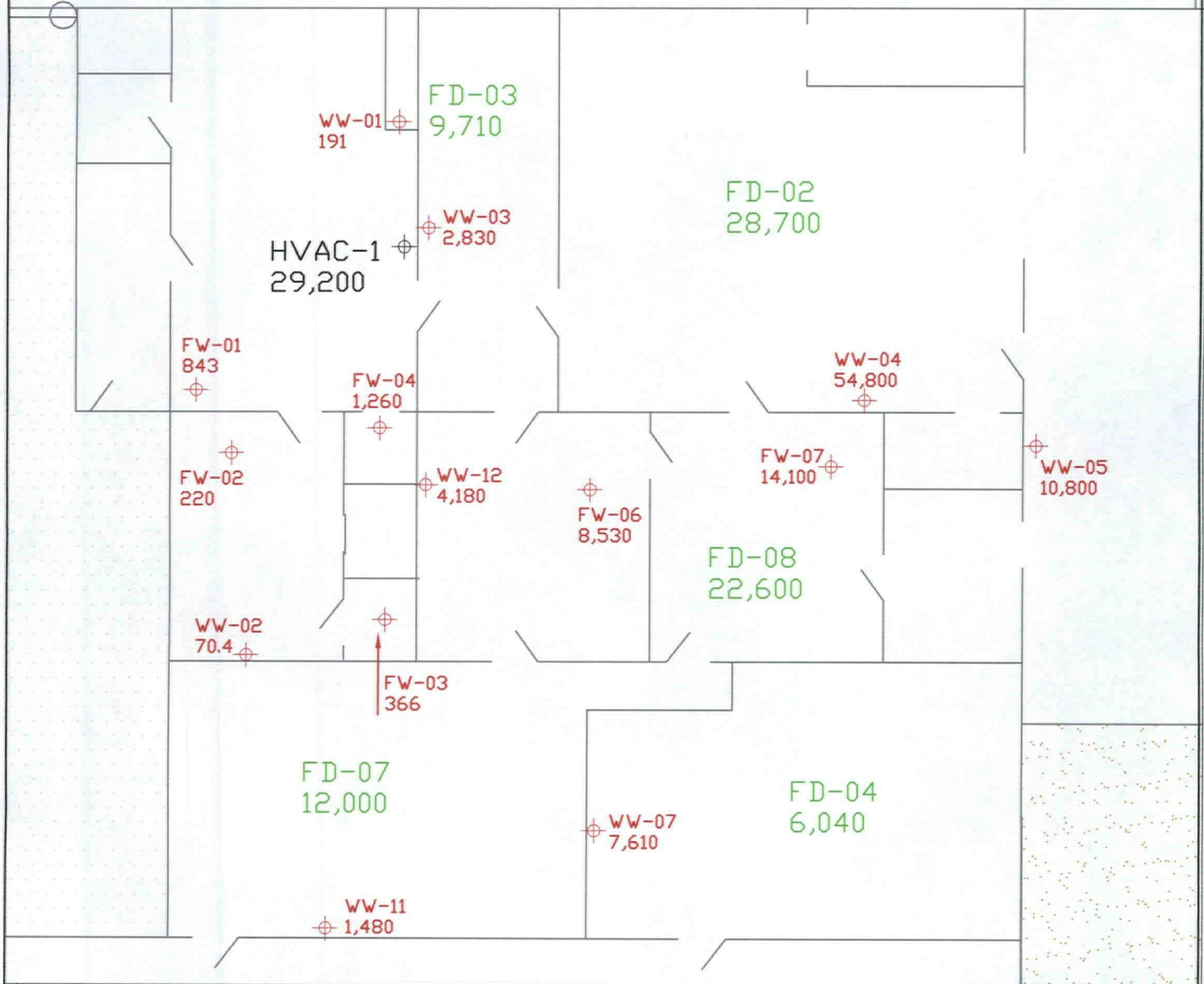
DATE MODIFIED 07-01-04

FW - Floor Wipe  
Results reported in ug/ft<sup>2</sup>

WW - Wall Wipe  
Results reported in ug/ft<sup>2</sup>

FD - Floor Dust  
Results reported in ppm lead

HVAC - Dust Sample from  
inside HVAC system



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Federal Programs Division

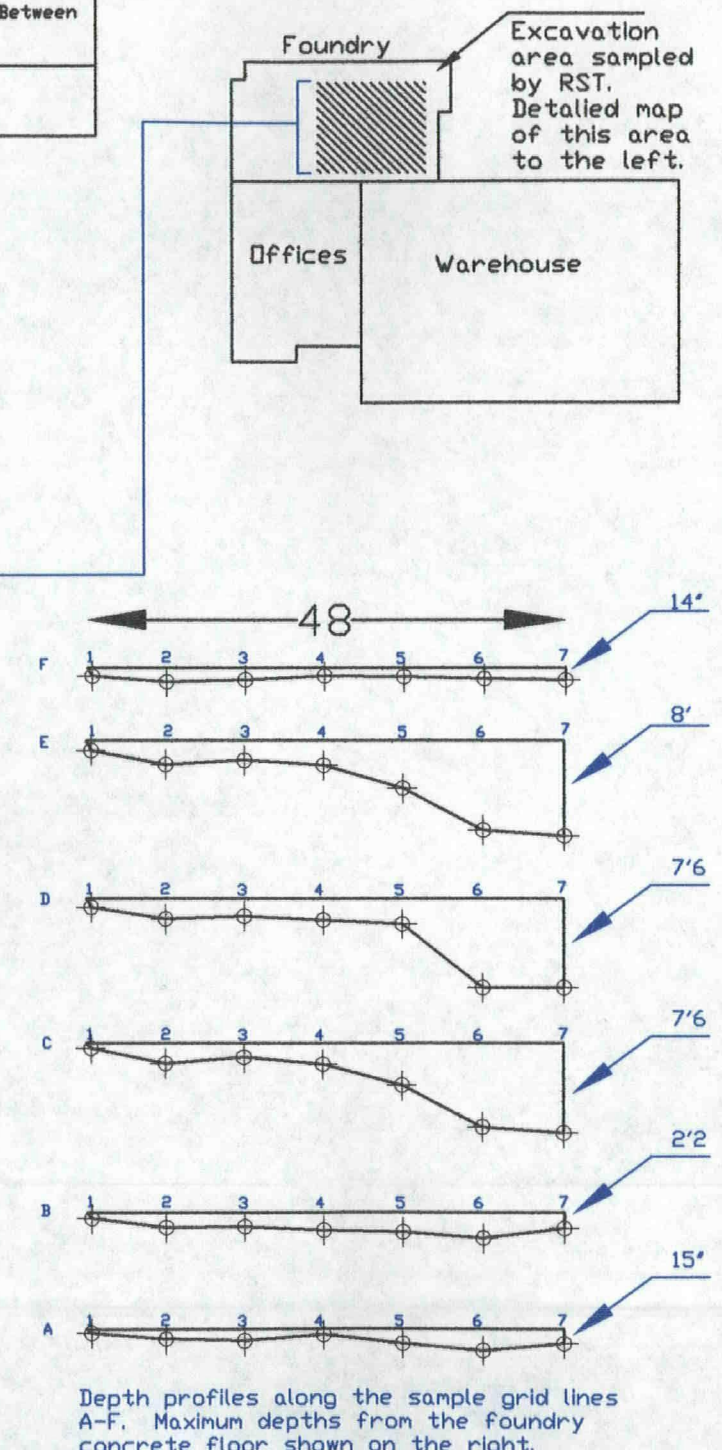
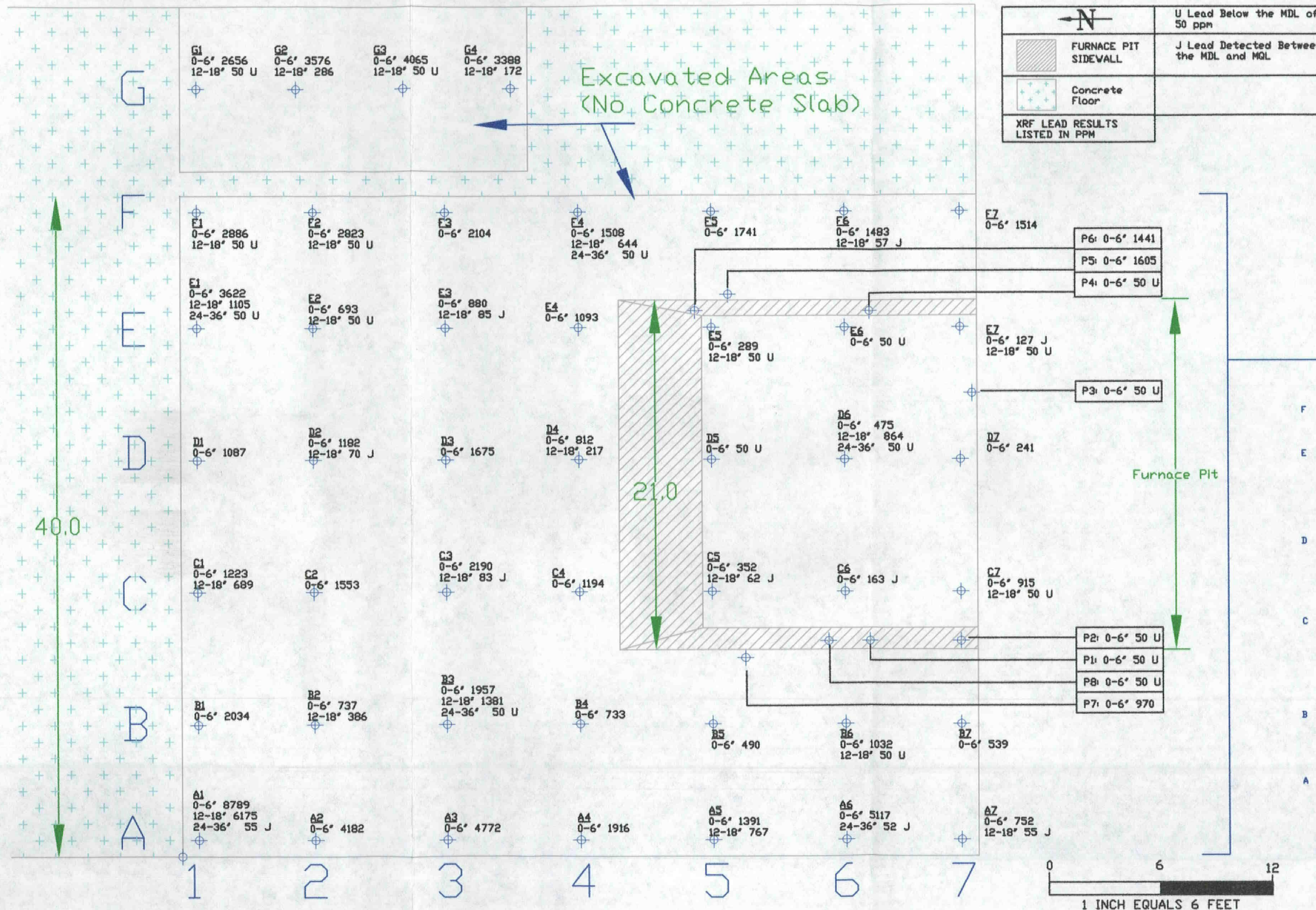
FIGURE 6  
INTERIOR SAMPLE LOCATION MAP WITH  
LABORATORY LEAD RESULTS (INSET)  
BARRY BRONZE BEARING CO. SITE  
2204 SOUTH SEVENTH ST  
CAMDEN, NEW JERSEY

US ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL SUPPORT TEAM  
CONTRACT # 68-W-00-113

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EPA OSC: DAVID ROSOFF  
RST SPM: T. KISH  
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DATE MODIFIED 07-01-04





**Figure 7**  
**FOUNDRY SAMPLE LOCATION**  
**MAP WITH XRF RESULTS**  
**BARRY BRONZE BEARING CO. SITE**  
**CAMDEN, NEW JERSEY**

**WESTON SOLUTIONS**  
 Restoring Resource Efficiency

Weston Solutions, Inc.  
 Federal Programs Division

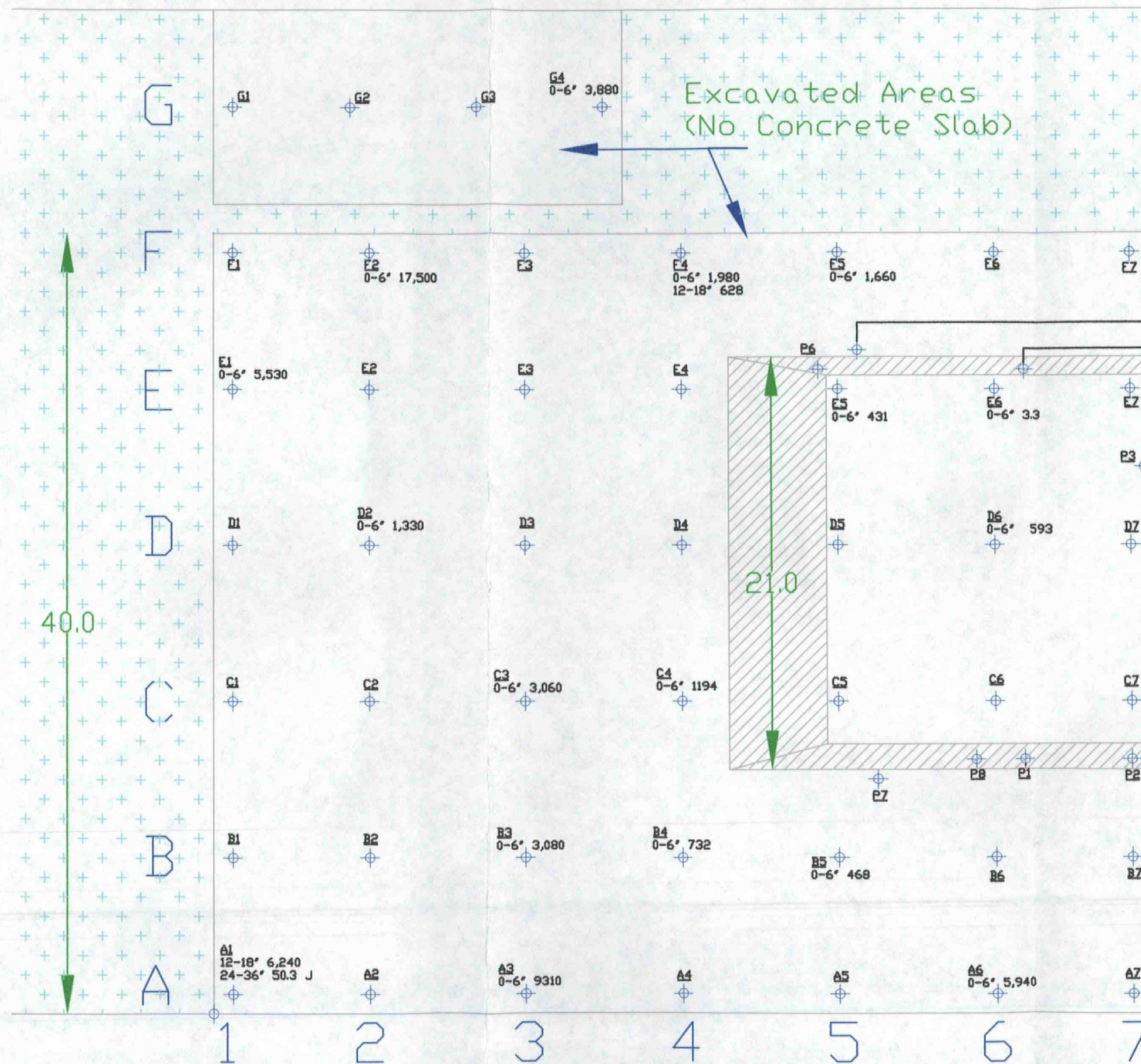
IN ASSOCIATION WITH  
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 SCIENTIFIC AND ENVIRONMENTAL ASSOCIATES, INC.,  
 AND TERRANEAR PMC




US ENVIRONMENTAL PROTECTION AGENCY  
 REMOVAL SUPPORT TEAM  
 CONTRACT # 68-W-00-113

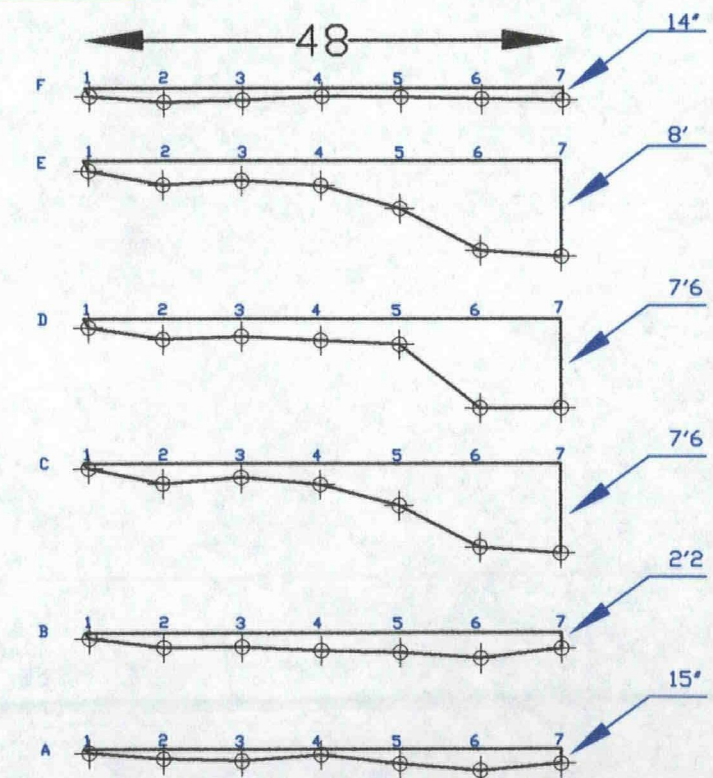
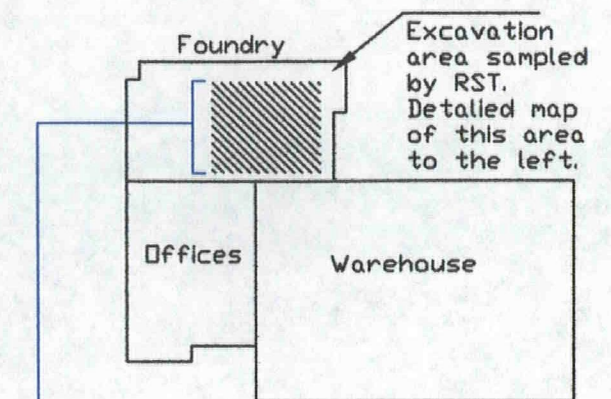
DRAWN BY: T. KISH  
 EPA OSC: DAVID ROSOFF  
 RST SPM: T. KISH  
 FILENAME: BARRYXRFFOUNDRY.DWG

DATE MODIFIED 07-01-04

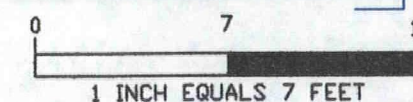




	U Lead Below the MDL of 50 ppm
 FURNACE PIT SIDEWALL	J Lead Detected Between the MDL and MGL
 Concrete Floor	
LABORATORY LEAD RESULTS LISTED IN PPM	



Depth profiles along the sample grid lines A-F. Maximum depths from the foundry concrete floor shown on the right.



**WESTON SOLUTIONS**  
Restoring Resource Efficiency

Weston Solutions, Inc.  
Federal Programs Division

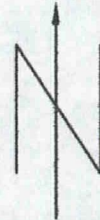
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SCIENTIFIC AND ENVIRONMENTAL ASSOCIATES, INC.,  
AND TERRANEAR PMC

Figure 8  
FOUNDRY SAMPLE LOCATION  
MAP WITH LABORATORY RESULTS  
BARRY BRONZE BEARING CO. SITE  
CAMDEN, NEW JERSEY

US ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL SUPPORT TEAM  
CONTRACT # 68-W-00-113

DRAWN BY:	T. KISH
EPA OSC:	DAVID ROSOFF
RST SPM:	T. KISH
FILENAME:	BARRYLABFOUNDRY.DWG





Sample Location	mg/kg
W71	53 J
W72	50 U
W73	265
W74	118 J
W75	256

Street

Sample Location	mg/kg	0-6"	24"
A1	3218	73 J	
A2	1420		
A3	1453		
A4	3837		
A5	7576	395	
A6	3104		
A7	2776		
A8	3534	56 J	
A9	1503		
A10	1972		
A11	1026		
A12	1467		
A13	6402	50 U	
A14	612		
A15	529		
A16	1397	50 U	
A17	949		
A18	308		
A19	363		
A20	673	50 U	
A21	334		
A22	295		
A23	235		

Sample Location	mg/kg	0-6"	24"
B1	1212		
B2	2880	523	
B3	959		
B4	2160		
B5	5166	96	
B6	4705		
B7	5597	51 J	
B8	3920		
B9	4624	71 J	
B10	3427		
B11	1646		
B12	2313	726	
B13	1604		
B14	553		
B15	1385	680	
B16	661		
B17	676		
B18	328		
B19	377		
B20	398	395	
B21	290		
B22	159 J		
B23	261		

Sample Location	mg/kg	0-6"	24"
C1	2349		
C2	1331		
C3	3584	50 U	
C4	2022		
C5	1852	480	
C6	772		
C7	303		
C8	731		
C9	2526	317	
C10	265		
C11	680		
C12	702		
C13	641	290	
C14	553		
C15	528		
C16	489		
C17	268		
C18	240		
C19	666	188	
C20	284		
C21	326		
C22	419		
C23	197		

Sample Location	mg/kg	0-6"	24"
D1	50 U		
D2	53 J		
D3	50 U	50 U	
D4	50 U		
D5	269	50 U	
D6	50 U		
D7	50 U		
D8	124 J		
D9	80 J		
D10	176	85 J	
D11	86 J		
D12	68 J		
D13	70 J		
D14	182		
D15	73 J		
D16	110 J		
D17	311		
D18	302		
D19	389		
D20	93 J		
D21	162 J		
D22	60 J		
D23	392	50 U	

Sample Location	mg/kg	0-6"
Z3	2005	
Z4	3602	
Z5	4073	
Z6	1432	
Z7	901	
Z8	92 J	
Z9	122 J	
Z10	50 U	
Z11	128 J	

Sample Location	mg/kg	0-6"
E81	223	
E82	72 J	
E83	110 J	
E84	653	
E85	84 J	
E86	122 J	

Street

D1+ D2+ D3+ D4+ D5+ D6+ D7+ D8+ D9+ D10+ D11+ D12+ D13+ D14+ D15+ D16+ D17+ D18+ D19+ D20+ D21+ D22+ D23+  
C1+ C2+ C3+ C4+ C5+ C6+ C7+ C8+ C9+ C10+ C11+ C12+ C13+ C14+ C15+ C16+ C17+ C18+ C19+ C20+ C21+ C22+ C23+  
Z3+ Z4+ Z5+ Z6+ Z7+ Z8+ Z9+ Z10+ Z11+  
B1+ B2+ B3+ B4+ B5+ B6+ B7+ B8+ B9+ B10+ B11+ B12+ B13+ B14+ B15+ B16+ B17+ B18+ B19+ B20+ B21+ B22+ B23+  
A1+ A2+ A3+ A4+ A5+ A6+ A7+ A8+ A9+ A10+ A11+ A12+ A13+ A14+ A15+ A16+ A17+ A18+ A19+ A20+ A21+ A22+ A23+  
E81+ E82+ E83+ E84+ E85+ E86+

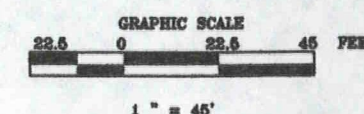
Chain Link Fence

B1+ B2+ B3+ B4+ B5+ B6+ B7+ B8+ B9+ B10+ B11+ B12+ B13+ B14+ B15+ B16+ B17+ B18+ B19+ B20+ B21+ B22+ B23+  
A1+ A2+ A3+ A4+ A5+ A6+ A7+ A8+ A9+ A10+ A11+ A12+ A13+ A14+ A15+ A16+ A17+ A18+ A19+ A20+ A21+ A22+ A23+  
E81+ E82+ E83+ E84+ E85+ E86+

Map Legend

	Natural Gas Line
	Buried Fiber Optic Communications Line
	Electric Utility
	Railroad Tracks
	Utility Pole
	Sample Location
	Remediated Area
	Grassy Lot Planned for Residential Development
	Lead Below the MDL of 50 ppm
	Estimated Value between the MDL and MQL

NOTE: All subsurface samples along the B grid line were collected at a depth of 24 inches and offset 4 feet to the south due to the buried fiber optic communications line.



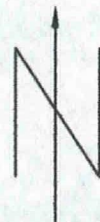
Weston Solutions, Inc.  
Federal Programs Division  
IN ASSOCIATION WITH  
INNOVATIVE TECHNOLOGICAL SOLUTIONS, INC.,  
SCIENTIFIC AND ENVIRONMENTAL ASSOCIATES, INC.,  
AND TERRANEAR PMC

Figure 9  
EXTERIOR LEAD DELINEATION  
XRF RESULTS  
BARRY BRONZE BEARING CO. SITE  
2204 SOUTH SEVENTH ST  
CAMDEN, NEW JERSEY

US ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL SUPPORT TEAM  
CONTRACT # 68-W-00-113

DRAWN BY: T. KISH  
EPA OSC: DAVID ROSOFF  
RST SPM: T. KISH  
FILENAME: BARRYXRFEXTlead.DWG





Street

S Seventh

Street

S Eighth

Sample Location	mg/kg
W75	314

Sample Location	mg/kg	0-6"	24"
A2	2450		
A3	1110		
A5	42,400	389	
A6	4190		
A8	4320		
A11	1250		
A13	13,000		
A16	1520		
A19	361		
A21	303		

Sample Location	mg/kg	0-6"	24"
B1	3820		
B2	2240	658	
B3	1310		
B5	7640	68.4	
B7	10,200		
B8	5,590		
B9	8710		
B11	1650		
B12		788	
B15	1330		
B17	1680		
B20	617		
B23	192		

Sample Location	mg/kg	0-6"	18"	24"
C1	1860			
C3	4170			
C5	2000	1510		
C55			466	
C8	715			
C9	3070	216		
C14	631			
C16	521			
C22	473			

Sample Location	mg/kg	0-6"	24"
D3	39.2		
D5	293	12.3	
D10	221		
D13	150		
D17	372		
D19	481		
D23	421		

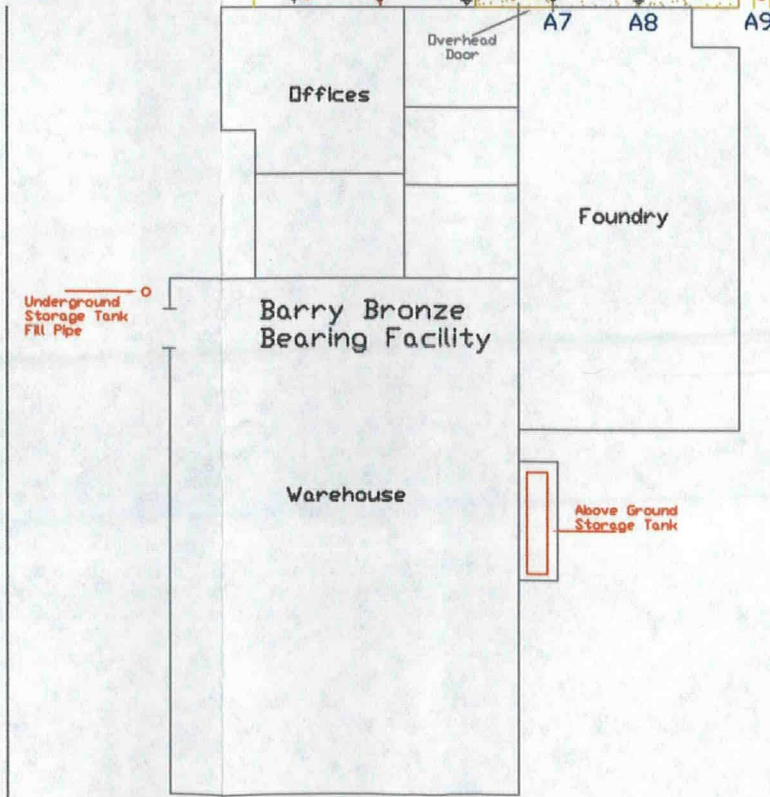
Sample Location	mg/kg	0-6"
Z5	5390	
Z7	1440	
Z8	148	

Sample Location	mg/kg	0-6"
E84	778	

W73 W74 W75  
W72 W71

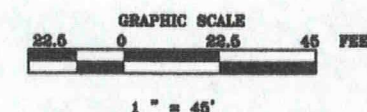
D1+ D2+ D3+ D4+ D5+ D6+ D7+ D8+ D9+ D10+ D11+ D12+ D13+ D14+ D15+ D16+ D17+ D18+ D19+ D20+ D21+ D22+ D23+  
C1+ C2+ C3+ C4+ C5+ C6+ C7+ C8+ C9+ C10+ C11+ C12+ C13+ C14+ C15+ C16+ C17+ C18+ C19+ C20+ C21+ C22+ C23+  
Z3+ Z4+ Z5+ Z6+ Z7+ Z8+ Z9+ Z10+ Z11+  
Chain Link Fence

B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20 B21 B22 B23  
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20 A21 A22 A23  
E81 E82 E83  
E84 E85 E86



Map Legend	
	Natural Gas Line
	Buried Fiber Optic Communications Line
	Electric Utility
	Railroad Tracks
	Utility Pole
	Sample Location
	Remediated Area
	Grassy Lot Planned for Residential Development
	Lead Below the MDL of 50 ppm
	Estimated Value between the MDL and MQL

NOTE: All subsurface samples along the B grid line were collected at a depth of 24 inches and offset 4 feet to the south due to the buried fiber optic communications line.



Weston Solutions, Inc.  
Federal Programs Division

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SCIENTIFIC AND ENVIRONMENTAL ASSOCIATES, INC.,  
AND TERRANEAR PMC

Figure 10  
EXTERIOR LEAD DELINEATION  
LABORATORY RESULTS  
BARRY BRONZE BEARING CO. SITE  
2204 SOUTH SEVENTH ST  
CAMDEN, NEW JERSEY

US ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL SUPPORT TEAM  
CONTRACT # 68-W-00-113

DRAWN BY: T. KISH  
EPA OSC: DAVID RDSOFF  
RST SPM: T. KISH  
FILENAME: BARRYlabextlead.DWG



Table 1.1:  
Exterior Sample Data  
Barry Bronze Site, Camden, NJ

Sample Identifier	Sample Depth	XRF Lead [ppm]	Laboratory Lead [ppm]	XRF Arsenic [ppm]	XRF Copper [ppm]
BBB-S-A1	0-6"	3218.2		13.6	9866.1
BBB-S-A2	0-6"	1419.8	2450	-0.6	3720.4
BBB-S-A3	0-6"	1452.9	1110	26.3	4185.8
BBB-S-A4	0-6"	3837.2		0.4	8490.0
BBB-S-A5	0-6"	7575.5	42400	191.8	29522.3
BBB-S-A6	0-6"	3104.1	4190	22.0	11351.6
BBB-S-A7	0-6"	2775.5		39.5	7264.3
BBB-S-A8	0-6"	3534.3	4320	60.5	7604.0
BBB-S-A8-Duplicate	0-6"	3673.3		84.9	8453.8
BBB-S-A9	0-6"	1502.6		29.4	3403.1
BBB-S-A9-Replicate	0-6"	1502.1		50.3	3541.3
BBB-S-A10	0-6"	1971.6		54.6	10409.3
BBB-S-A11	0-6"	1026.1	1250	30.7	2789.1
BBB-S-A12	0-6"	1467.0		28.4	6321.6
BBB-S-A13	0-6"	6401.6	13000	84.1	5575.0
BBB-S-A14	0-6"	612.2		-5.4	1776.6
BBB-S-A15	0-6"	528.7		18.5	1335.5
BBB-S-A16	0-6"	1396.9	1520	17.1	2698.2
BBB-S-A17	0-6"	949.1		52.0	1660.6
BBB-S-A18	0-6"	308.1		15.4	919.6
BBB-S-A18-Duplicate	0-6"	249.3		28.4	732.9
BBB-S-A19	0-6"	362.8	361	61.0	1047.6
BBB-S-A19-Replicate	0-6"	398.4		26.4	1056.3
BBB-S-A20	0-6"	672.5		1.2	1885.4
BBB-S-A21	0-6"	333.5	303	6.3	862.7
BBB-S-A22	0-6"	295.1		31.5	764.6
BBB-S-A23	0-6"	234.6		-9.1	417.1
BBB-S-B1	0-6"	1211.8	3820	60.5	3454.8
BBB-S-B2	0-6"	2879.6	2240	58.1	7128.9
BBB-S-B3	0-6"	958.6	1310	-4.1	2804.3
BBB-S-B4	0-6"	2160.2		-65.1	4996.8
BBB-S-B5	0-6"	5165.9	7640	-13.4	17918.8
BBB-S-B6	0-6"	4704.6		-6.8	14200.7
BBB-S-B7	0-6"	5597.2	10200	100.2	17743.2
BBB-S-B8	0-6"	3920.1	5590	9.8	10235.4
BBB-S-B8-Duplicate	0-6"	3991.7		127.1	11501.3
BBB-S-B9	0-6"	4624.4	8710	-118.8	15030.8
BBB-S-B9-Replicate	0-6"	4784.3		45.6	16017.4
BBB-S-B10	0-6"	3427.7		17.3	14577.7
BBB-S-B11	0-6"	1646.0	1650	41.3	4222.7
BBB-S-B12	0-6"	2313.5		-16.5	3896.2
BBB-S-B13	0-6"	1604.3		9.2	5644.3
BBB-S-B14	0-6"	552.8		41.3	1603.9
BBB-S-B15	0-6"	1385.3	1330	-14.4	1943.1
BBB-S-B16	0-6"	660.6		0.8	1635.2
BBB-S-B17	0-6"	676.1	1680	-24.6	1592.7
BBB-S-B18	0-6"	327.8		38.4	751.9
BBB-S-B18-Duplicate	0-6"	347.1		-23.0	629.2

Sample Identifier	Sample Depth	XRF Lead [ppm]	Laboratory Lead [ppm]	XRF Arsenic [ppm]	XRF Copper [ppm]
BBB-S-B19	0-6"	377.3		11.7	1010.6
BBB-S-B19-Replicate	0-6"	355.7		41.9	1102.0
BBB-S-B20	0-6"	397.7	617	-16.7	1027.9
BBB-S-B21	0-6"	290.0		12.1	456.8
BBB-S-B22	0-6"	158.9		15.0	146.8
BBB-S-B23	0-6"	261.4	192	30.2	520.0
BBB-S-C1	0-6"	2348.9	1860	70.0	3950.5
BBB-S-C2	0-6"	1331.1		3.7	3045.1
BBB-S-C3	0-6"	3584.3	4170	-5.3	9478.1
BBB-S-C4	0-6"	2022.4		-11.2	3042.9
BBB-S-C5	0-6"	1852.4	2000	83.3	3008.8
BBB-S-C6	0-6"	771.9		42.7	2227.7
BBB-S-C6-Duplicate	0-6"	886.4		51.2	2569.6
BBB-S-C7	0-6"	303.2		30.7	825.7
BBB-S-C7-Replicate	0-6"	303.5		32.7	866.4
BBB-S-C8	0-6"	731.3	715	-39.6	1371.8
BBB-S-C9	0-6"	2526.0	3070	24.5	6674.8
BBB-S-D9	0-6"	79.5		-27.6	290.0
BBB-S-C10	0-6"	264.7		22.9	1216.2
BBB-S-C11	0-6"	680.2		10.2	1837.9
BBB-S-C12	0-6"	702.0		20.7	2114.7
BBB-S-C13	0-6"	640.7		56.2	1727.0
BBB-S-C14	0-6"	552.5	631	21.0	1179.6
BBB-S-C15	0-6"	527.5		10.0	1459.0
BBB-S-C15-Duplicate	0-6"	493.3		63.0	1509.3
BBB-S-C16	0-6"	488.8	521	-11.2	892.2
BBB-S-C16 Replicate	0-6"	461.8		28.7	1027.3
BBB-S-C17	0-6"	267.7		2.1	838.2
BBB-S-C18	0-6"	239.7		10.0	493.8
BBB-S-C19	0-6"	665.5		11.5	1409.2
BBB-S-C20	0-6"	283.7		-2.4	506.6
BBB-S-C21	0-6"	326.3		22.7	642.4
BBB-S-C22	0-6"	418.9	473	20.8	510.4
BBB-S-C23	0-6"	197.0		4.2	263.4
BBB-S-D1	0-6"	44.5		1.0	34.7
BBB-S-D2	0-6"	53.2		1.8	43.7
BBB-S-D3	0-6"	30.2	39.2	6.8	33.0
BBB-S-D4	0-6"	19.9		11.3	61.6
BBB-S-D4-Duplicate	0-6"	46.5		4.4	141.5
BBB-S-D5	0-6"	268.7	293	10.3	472.3
BBB-S-D5-Replicate	0-6"	239.6		-7.9	485.0
BBB-S-D6	0-6"	33.7		1.4	31.3
BBB-S-D7	0-6"	35.7		14.0	106.3
BBB-S-D8	0-6"	124.3		11.8	11.2
BBB-S-D10	0-6"	176.0	221	-0.4	358.6
BBB-S-D11	0-6"	86.1		11.5	184.4
BBB-S-D12	0-6"	68.4		2.8	73.0
BBB-S-D13	0-6"	69.8	150	72.3	333.2

Table 1.1:  
Exterior Sample Data  
Barry Bronze Site, Camden, NJ

Sample Identifier	Sample Depth	XRF Lead [ppm]	Laboratory Lead [ppm]	XRF Arsenic [ppm]	XRF Copper [ppm]
BBB-S-D14	0-6"	181.6		-12.2	665.4
BBB-S-D15	0-6"	73.4		10.3	223.2
BBB-S-D15 Duplicate	0-6"	84.6		17.1	252.2
BBB-S-D16	0-6"	110.1		2.6	326.0
BBB-S-D16-Replicate	0-6"	151.4		-21.6	341.8
BBB-S-D17	0-6"	310.6	372	30.5	1207.9
BBB-S-D18	0-6"	301.7		12.2	1014.5
BBB-S-D19	0-6"	389.2	481	11.9	1058.8
BBB-S-D20	0-6"	92.5		5.6	140.5
BBB-S-D21	0-6"	162.0		15.7	364.2
BBB-S-D22	0-6"	60.4		29.8	22.3
BBB-S-D23	0-6"	391.6	421	-5.6	491.1
BBB-S-Z3	0-6"	2004.6		11.9	4703.2
BBB-S-Z4	0-6"	3601.9		-57.0	9711.1
BBB-S-Z5	0-6"	4073.3	5390	-50.9	10725.2
BBB-S-Z6	0-6"	1432.2		40.2	3708.0
BBB-S-Z6-Duplicate	0-6"	1354.1		21.9	3105.2
BBB-S-Z7	0-6"	901.1	1440	-33.7	2166.8
BBB-S-Z7-Replicate	0-6"	774.1		71.9	2017.8
BBB-S-Z8	0-6"	92.1	148	2.6	324.1
BBB-S-Z9	0-6"	121.5		4.4	382.1
BBB-S-Z10	0-6"	39.4		26.7	271.4
BBB-S-Z11	0-6"	128.1		-36.8	41.4
BBB-SS-D3	18-24"	4.4		14.0	1.9
BBB-SS-D5	18-24"	-13.8	12.3	-6.9	-76.3
BBB-SS-D10	18-24"	85.4		1.6	78.7
BBB-SS-D23	18-24"	2.4		36.2	146.8
BBB-SS-C19	18-24"	188.4		-6.2	180.1
BBB-SS-C19-Duplicate	18-24"	169.9		20.1	133.4
BBB-SS-C13	18-24"	289.6		25.2	490.0
BBB-SS-C9	18-24"	317.1	216	-8.5	294.0
BBB-SS-C3	18-24"	24.5		-0.9	105.9
BBB-SS-C3-Replicate	18-24"	-20.1		22.7	92.9
BBB-SS-B2	18-24"	523.4	658	0.6	1804.1
BBB-SS-B15	18-24"	680.5		-60.0	790.1
BBB-SS-B15-Duplicate	18-24"	582.1		-2.4	770.8
BBB-SS-B5	18-24"	95.7	68.4	0.9	143.3
BBB-SS-B12	18-24"	726.1	788	4.0	410.4
BBB-SS-B12-Replicate	18-24"	736.1		14.8	453.9
BBB-SS-B9	18-24"	71.3		22.5	151.0
BBB-SS-B9-Replicate	18-24"	89.3		3.5	129.2
BBB-SS-A5	18-24"	395.1	389	28.2	655.2
BBB-SS-A5-Duplicate	18-24"	379.4		67.9	740.6
BBB-SS-C5	12-18"	1761.7	1510	25.2	2524.4
BBB-SS-A8	18-24"	56.2		-15.2	150.6
BBB-SS-A13	18-24"	40.1		25.0	9.6
BBB-S-W72	0-6"	26.2		-11.2	85.8
BBB-S-W71	0-6"	52.7		13.5	224.0

Table 1.1:  
Exterior Sample Data  
Barry Bronze Site, Camden, NJ

Sample Identifier	Sample Depth	XRF Lead [ppm]	Laboratory Lead [ppm]	XRF Arsenic [ppm]	XRF Copper [ppm]
BBB-S-W73	0-6"	265.0		-13.2	618.5
BBB-S-W73-Duplicate	0-6"	256.6		-9.5	538.7
BBB-S-W75	0-6"	255.9	314	37.3	588.9
BBB-S-W75-Replicate	0-6"	264.9		20.3	693.5
BBB-S-W74	0-6"	117.9		14.0	88.3
BBB-SS-B20	18-24"	394.7		56.4	621.5
BBB-SS-B20-Replicate	18-24"	484.5		7.3	516.3
BBB-SS-A16	18-24"	20.4		1.0	65.1
BBB-SS-A16-Duplicate	18-24"	30.9		-6.0	17.0
BBB-SS-C55 (=C5 24")	18-24"	479.9	466	40.8	793.8
BBB-SS-A20	18-24"	0.4		24.9	82.9
BBB-SS-A1	18-24"	73.1		14.4	133.8
BBB-SS-B7	18-24"	50.7		6.7	10.9
BBB-S-8E1	0-6"	223.3		1.2	593.8
BBB-S-8E2	0-6"	71.6		-6.1	203.2
BBB-S-8E3	0-6"	110.0		4.1	300.5
BBB-S-E84	0-6"	652.5	778	17.4	802.9
BBB-S-E84-Duplicate	0-6"	750.1		4.8	888.3
BBB-S-E85	0-6"	84.0		11.9	129.3
BBB-S-E85-Replicate	0-6"	70.5		20.1	166.7
BBB-S-E86	0-6"	121.8		16.3	90.2
TESY-A5-Cup	N/A	5040.0		-72.6	13378.0
TEST-A5-Bag	N/A	5481.8		95.0	15689.8
TEST-B20-Bag	N/A	464.4		49.0	497.8

Table 1.2:  
Interior Sample Data  
Barry Bronze Site, Camden, NJ

Sample Identifier	Sample Depth	XRF Lead [ppm]	Laboratory Lead [ppm]	XRF Arsenic [ppm]	XRF Copper [ppm]
BBB-FS-B1	0-6"	2033.9		3.5	2520.7
BBB-FS-B2	0-6"	736.5		2.6	778.7
BBB-FS-B3	0-6"	1956.9	3080	-42.7	2627.1
BBB-FS-B4	0-6"	732.6		21.2	1149.0
BBB-FS-B5	0-6"	490.2	468	23.2	671.7
BBB-FS-B6	0-6"	1032.3	1390	0.7	1017.0
BBB-FS-B7	0-6"	538.5		10.1	641.6
BBB-FS-A1	0-6"	8789.1	7110	83.1	15137.2
BBB-FS-A1-Duplicate	0-6"	7929.3		143.8	14532.2
BBB-FS-A2	0-6"	4182.4		173.0	6759.3
BBB-FS-A2-Replicate	0-6"	4305.4		43.8	6569.9
BBB-FS-A3	0-6"	4772.3	9310	-32.4	4978.7
BBB-FS-A4	0-6"	1916.1		52.1	2917.2
BBB-FS-A5	0-6"	1390.9		21.5	1533.1
BBB-FS-A6	0-6"	5116.6	5940	-49.5	5086.8
BBB-FS-A7	0-6"	751.7		-23.4	405.8
BBB-FS-C1	0-6"	1223.1		2.8	1680.5
BBB-FS-C2	0-6"	1552.8		1.4	2359.8
BBB-FS-C3	0-6"	2189.8	3060	73.8	3090.7
BBB-FS-C3-Duplicate	0-6"	2072.5		-63.5	2616.0
BBB-FS-C4	0-6"	1193.6		59.9	1362.9
BBB-FS-C4-Replicate	0-6"	1329.7		37.0	1257.3
BBB-FS-C5	0-6"	351.9		50.4	324.3
BBB-FS-C6	0-6"	162.8		4.0	123.2
BBB-FS-C7	0-6"	914.5		38.8	784.9
BBB-FS-D1	0-6"	1087.2		-19.6	1592.0
BBB-FS-D2	0-6"	1182.4	1330	-19.7	1474.7
BBB-FS-D3	0-6"	1674.9		52.4	2599.3
BBB-FS-D4	0-6"	811.9		-19.3	1289.0
BBB-FS-D4-Replicate	0-6"	804.1		-4.3	1208.0
BBB-FS-D5	0-6"	-10.8		21.8	-37.9
BBB-FS-D6	0-6"	475.3	593	-31.8	406.2
BBB-FS-D7	0-6"	240.9		-0.1	267.8
BBB-FS-E1	0-6"	3621.6	5530	52.8	6244.4
BBB-FS-E1-Duplicate	0-6"	2963.4		-38.4	5396.9
BBB-FS-E2	0-6"	692.8		1.2	1051.6
BBB-FS-E3	0-6"	879.6		-36.5	1412.6
BBB-FS-E4	0-6"	1092.9		-6.2	1568.6
BBB-FS-E5	0-6"	288.9	431	8.8	277.3
BBB-FS-E6	0-6"	29.9	3.3	-5.9	129.6
BBB-FS-E7	0-6"	126.8		21.2	171.4
BBB-FS-F1	0-6"	2886.3		16.4	4860.2
BBB-FS-F2	0-6"	2822.6	17500	10.7	3547.1
BBB-FS-F3	0-6"	2103.9		-13.9	1995.2
BBB-FS-F3-Replicate	0-6"	2207.6		-35.1	2214.7
BBB-FS-F4	0-6"	1507.7	1980	30.9	2019.9
BBB-FS-F4-Duplicate	0-6"	1482.1		-1.4	1314.5
BBB-FS-F5	0-6"	1740.7	1660	-77.8	1530.2
BBB-FS-F6	0-6"	1482.6		13.1	734.5

Sample Identifier	Sample Depth	XRF Lead [ppm]	Laboratory Lead [ppm]	XRF Arsenic [ppm]	XRF Copper [ppm]
BBB-FS-F7	0-6"	1514.0		-35.4	696.8
BBB-FS-G1	0-6"	2656.0		59.1	4223.3
BBB-FS-G2	0-6"	3575.7		58.4	5482.7
BBB-FS-G3	0-6"	4064.7	2690	-75.9	4676.1
BBB-FS-G4	0-6"	3387.9	3880	-1.1	4287.9
BBB-FSB-A1	12" - 18"	6175.3	6240	-76.5	11385.0
BBB-FSB-A5	12" - 18"	767.2		9.5	723.2
BBB-FSB-A7	12" - 18"	54.8		5.0	88.6
BBB-FSB-B2	12" - 18"	386.3		-8.7	444.0
BBB-FSB-B3	12" - 18"	1381.0		30.8	1776.6
BBB-FSB-B6	12" - 18"	11.9		7.3	118.6
BBB-FSB-C1	12" - 18"	689.3		41.9	1646.7
BBB-FSB-C3	12" - 18"	83.1		2.3	229.2
BBB-FSB-C5	12" - 18"	62.2		33.2	79.0
BBB-FSB-C5-Duplicate	12" - 18"	-8.7		2.6	-3.0
BBB-FSB-C7	12" - 18"	8.4		16.0	105.2
BBB-FSB-C7-Replicate	12" - 18"	22.0		-0.3	-2.6
BBB-FSB-D2	12" - 18"	69.9		5.4	136.4
BBB-FSB-D4	12" - 18"	217.2		61.6	580.0
BBB-FSB-D6	12" - 18"	864.4		-13.6	1195.5
BBB-FSB-E1	12" - 18"	1104.7	835	-36.9	643.7
BBB-FSB-E3	12" - 18"	85.4		-0.6	203.8
BBB-FSB-E5	12" - 18"	7.2		-6.4	21.6
BBB-FSB-E7	12" - 18"	8.5		-4.4	27.8
BBB-FSB-F2	12" - 18"	23.6		-1.3	119.3
BBB-FSB-F4	12" - 18"	644.1	628	43.7	374.2
BBB-FSB-F6	12" - 18"	57.4		-17.4	86.9
BBB-FSB-G1	12" - 18"	24.4		2.4	98.6
BBB-FSB-G2	12" - 18"	286.3		0.7	284.3
BBB-FSB-G3	12" - 18"	14.7		16.3	46.9
BBB-FSB-G4	12" - 18"	172.0		8.7	23.3
BBB-FS-P1	0-6"	-22.4	2.3	53.5	-9.8
BBB-FS-P2	0-6"	18.6		-9.0	-3.6
BBB-FS-P2-Duplicate	0-6"	-0.8		9.0	38.3
BBB-FS-P3	0-6"	3.2		-1.1	127.2
BBB-FS-P3-Replicate	0-6"	20.5		-9.9	-12.6
BBB-FS-P4	0-6"	29.1	11.7	0.6	309.0
BBB-FS-P5	0-6"	1605.2	1980	-39.2	1087.5
BBB-FS-P6	0-6"	1441.4		52.3	853.5
BBB-FS-P7	0-6"	969.7		21.7	803.0
BBB-FS-P8	0-6"	8.1		7.2	39.3
BBB-FS-SP1	0-6"	46.8	114	1.1	225.4
BBB-FS-SP2	0-6"	1788.9		69.8	2001.9
BBB-FS-SP3	0-6"	1099.5		35.4	2116.3
BBB-FS-SP4	0-6"	1323.9		-51.2	1475.9
BBB-FS-SP5	0-6"	2621.5	2840	119.8	3041.7
BBB-FS-SP5-Duplicate	0-6"	2536.4		33.6	3680.1
BBB-FS-SP6	0-6"	4649.8	5440	-12.9	9088.2
BBB-FS-SP7	0-6"	5730.1	6590	43.2	6187.8

Sample Identifier	Sample Depth	XRF Lead [ppm]	Laboratory Lead [ppm]	XRF Arsenic [ppm]	XRF Copper [ppm]
BBB-FS-SP8	0-6"	1960.7		46.4	2456.9
BBB-FS-SP8-Replicate	0-6"	1952.4		34.9	2644.1
BBB-FD-1	N/A	23706.8	23200	604.3	106152.7
BBB-FD-2	N/A	40938.8	28700	2043.0	204464.6
BBB-FD-3	N/A	11615.2	9710	384.6	57055.2
BBB-FD-4	N/A	8666.2	6040	349.8	12331.3
BBB-FD-5	N/A	8116.8	7840	139.4	20569.8
BBB-FD-6	N/A	6283.6	5210	-109.7	11717.7
BBB-FD-7	N/A	14310.6	12000	238.9	32613.6
BBB-FD-8	N/A	25628.5	22600	895.8	80838.1
BBB-FD-9	N/A	7042.0		138.6	15622.3
BBB-FD-9-Duplicate	N/A	7559.0		290.8	17137.3
BBB-FSC-A6	24" - 30"	52.1		-0.2	-116.0
BBB-FSC-A6-Replicate	24" - 30"	29.5		12.3	32.6
BBB-FSC-A1	24" - 30"	54.8	50.3	7.4	82.6
BBB-FSC-B3	24" - 30"	27.3		3.9	95.9
BBB-FSC-E1	24" - 30"	17.6		0.8	61.0
BBB-FSC-F4	24" - 30"	23.9		-6.2	25.6
BBB-FSC-D6	24" - 30"	49.1		9.0	68.8
HVAC-1	N/A	38572.8	29200	1215.6	37111.3

Table 2  
TCLP Lead Sample Results (Bulson Street)  
Barry Bronze Bearing Site  
Sampling Date: April 8, 2004

Matrix	Soil	Soil	Soil
Client Sample ID	BBB-S-A-5	BBB-S-B-2	BBB-S-B-7
Lab Sample ID	S2222-17	S2222-18	S2222-19
Lead	118,000 ug/L	11,400 ug/L	287,000 ug/L

XRF 7515  
LAB 42400

XRF 2879  
LAB 2240

XRF 5597  
LAB 10200



**Table 3**  
**RCRA Metals Results**  
**Interior Samples**  
**Barry Bronze Bearing Site, Camden, NJ**

Sample #/Concentration (mg/kg)					
Matrix:	Soil	Soil	Soil	Soil	Soil
Client ID:	BBB-FS- A1	BBB-FS- G3	BBB-FD-2	BBB-FD-8	BBB-HVAC-1
Lab ID:	N66707-1A	N66707-7A	N66707-15A	N66707-21A	N66707-22A
Percent Solids	98.5	93.2	98.7	95.3	95.6
Arsenic	5.8	6.6	5.7	14.6	16.4
Barium	28.9 B	471	52.9	35.8 B	165
Cadmium	2.5	1.7	7.2	7.7	25.3
Chromium	14.5	14.7	21.9	24.4	56.6
Lead	7110	2690	28700	22600	29200
Mercury	0.22	0.18	1.3	0.33	52.7
Selenium	1.0	0.76 B	1.0	1.8	5.3
Silver	4.5	0.34 B	37.5	19.9	16.1

Matrix:	Soil	Soil	Soil	Soil	Soil
Client ID:	BBB-FS- SP6	BBB-FS- SP-7	BBB-FSB-E1	BBB-FS-P1	BBB-FS-B6
Lab ID:	N66707-51A	N66707-52A	N66707-53A	N66707-54A	N66707-55A
Percent Solids	97.6	99.2	98.3	95.3	93.3
Arsenic	5.3	6.4	2.5	1.1 B	4.1
Barium	47.1	37.2 B	13.3 B	6.9 B	61.8
Cadmium	1.2	3.3	0.24 B	U	0.75 B
Chromium	17.4	11.4	5.5	1.2 B	4.9
Lead	5440	6590	835	2.3	1390
Mercury	0.32	0.27	0.19	0.04 B	0.39
Selenium	0.87 B	1.1	U	U	U
Silver	0.86 B	5.9	0.14 B	U	0.2 B

B: Between the Contract Required Detection Limit and the Instrument Detection Limit

U: Not detected

## **APPENDIX A**

### **Referral Letter from the City of Camden Barry Bronze Bearing Company Site**



Melvin R. Primas, Jr.  
Chairman

Arijit De  
Executive Director

January 12, 2004

Richard Salkie  
Removal Action Branch Chief  
US Environmental Protection Agency  
2890 Woodbridge Avenue  
Building 209  
Edison, NJ 08837

**RE: 2204 South 7<sup>th</sup> Street, Camden, NJ**

Dear Mr. Salkie,

I was recently made aware that the EPA is able to perform assessments on select sites to judge their removal action eligibility. I am writing today to request that the EPA perform an assessment of 2204 South 7<sup>th</sup> Street, Camden, New Jersey for removal action eligibility under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The property is privately owned by the Barry Bronze Bearing Company, Inc., which shut down its bronze casting operations in 1997. This is a one-acre site occupied by a 19,000sf, one story building with a paved parking area. The building is broken into three major sections: office, foundry and a storage area. The City and the owner have been working together to determine clean-up needs. We are now requesting your assistance with this process.

Thank you for your consideration in this matter. If you should have any questions, please contact the Agency's Director of Real Estate, William Spearman, at (856) 968-3534.

Sincerely,

Arijit De  
Executive Director

cc: Dave Rosoff, EPA  
Carrie Turner, Assistant Director, CRA  
William Spearman, Director of Real Estate, CRA  
Fred Martin, Sr. Administrative Analyst, City of Camden

## **APPENDIX B**

### **Process Description Barry Bronze Bearing Company Site**

**Process Description - Barry Bronze Bearing Company**  
**2204 South 7<sup>th</sup> Street**  
**Camden, New Jersey**  
**(From the March 1998 Preliminary Assessment)**

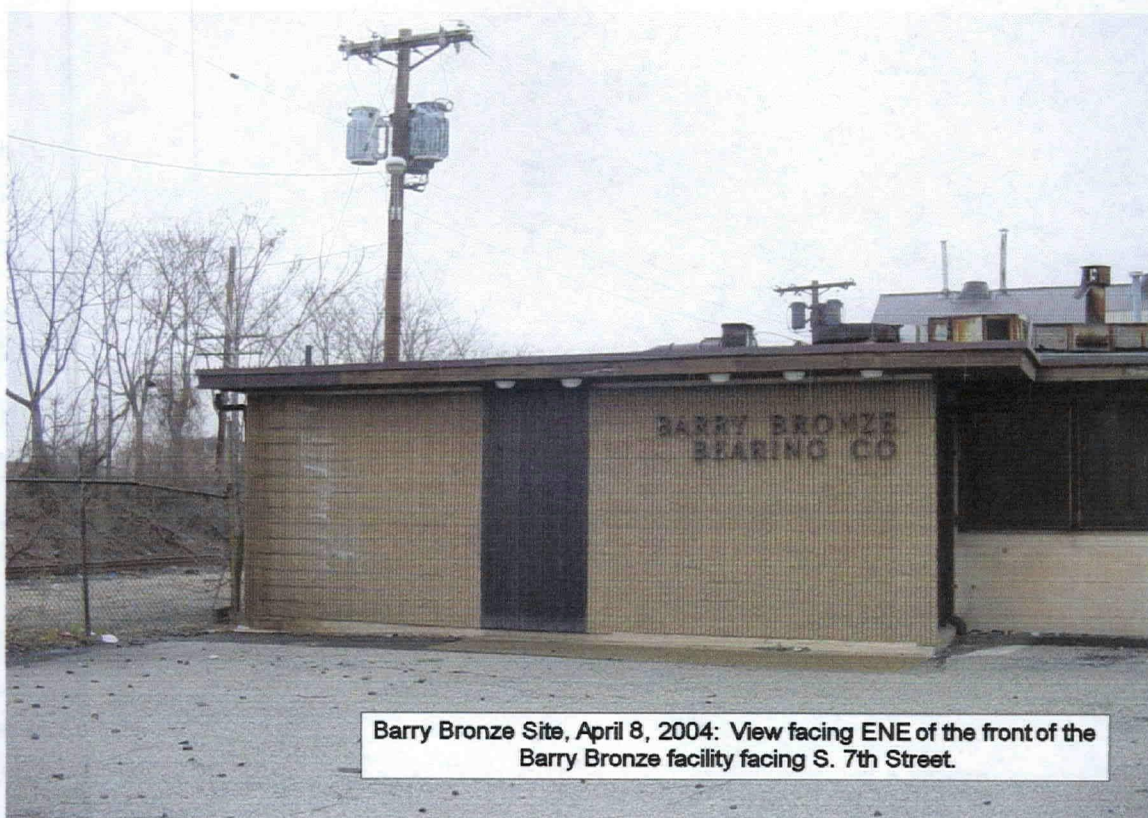
Bronze alloy ingots of quality bearing material are melted in a silicon carbide crucible situated in circular furnaces lined with fire brick. Temperatures can reach 2,000 degrees Fahrenheit in this vessel which is heated by ignited No. 2 fuel oil surrounding it, forced in this configuration by high velocity turbine type air blowers.

While this procedure is taking place, molds are being prepared at molding stations. A pattern for the shape of casting desired is placed inside of a steel container called a flask and is covered with a combination of natural sands, depending on the casting size and weight. When the mold is completed, the pattern is removed. This leaves a void in the mold which is filled with molten metal when the pouring operation is activated. This is accomplished by removing the furnace cover, placing tongs over the crucible which is lifted from the furnace by an overhead crane operation. When the crucible reaches the pouring station, the operator uses the handles on the tongs to force the crucible into pouring position and the molten metal flows into the mold.

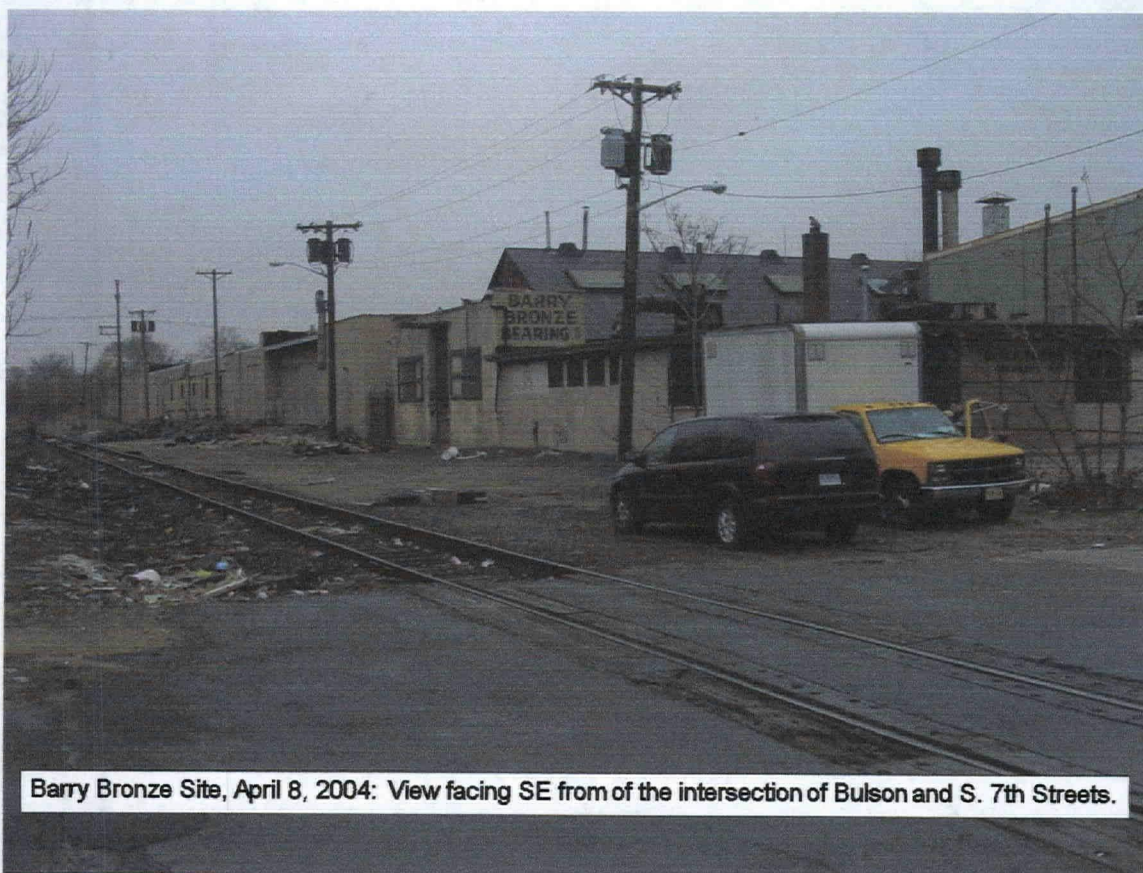
Upon cooling, the molds are dumped in the pouring area so that the sand can be reclaimed. Castings are taken to the cleaning area where feed gates and cooling risers are removed by an electric powered cut off wheel. Small fins are taken off with a cold chisel. Final cleaning is accomplished in the steel shot blast machine which has an unending steel slatted rotation, continually tumbling the castings as they are blasted with the shot. This operation is timed so that no erosion of the casting occurs. When the castings are finished they are removed, marked and packaged for shipment.

## **APPENDIX C**

### **Photo Documentation Barry Bronze Bearing Company Site**

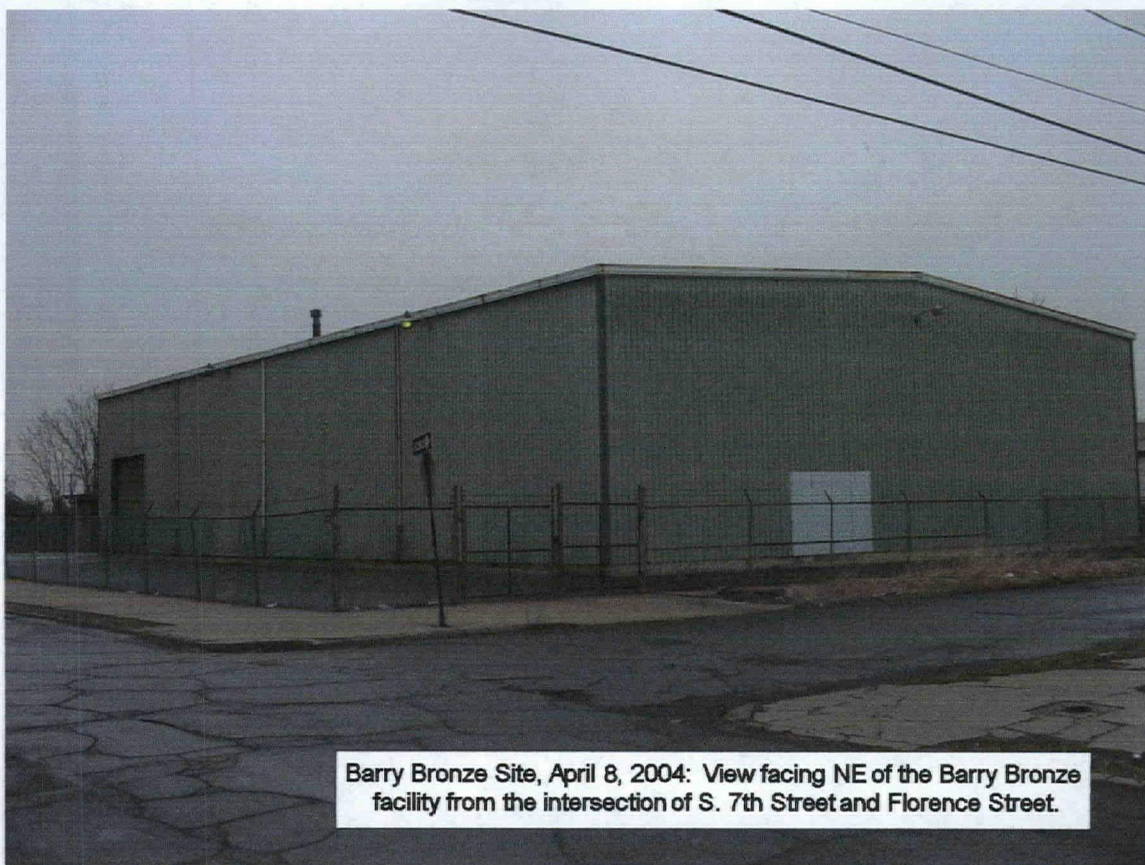


Barry Bronze Site, April 8, 2004: View facing ENE of the front of the Barry Bronze facility facing S. 7th Street.

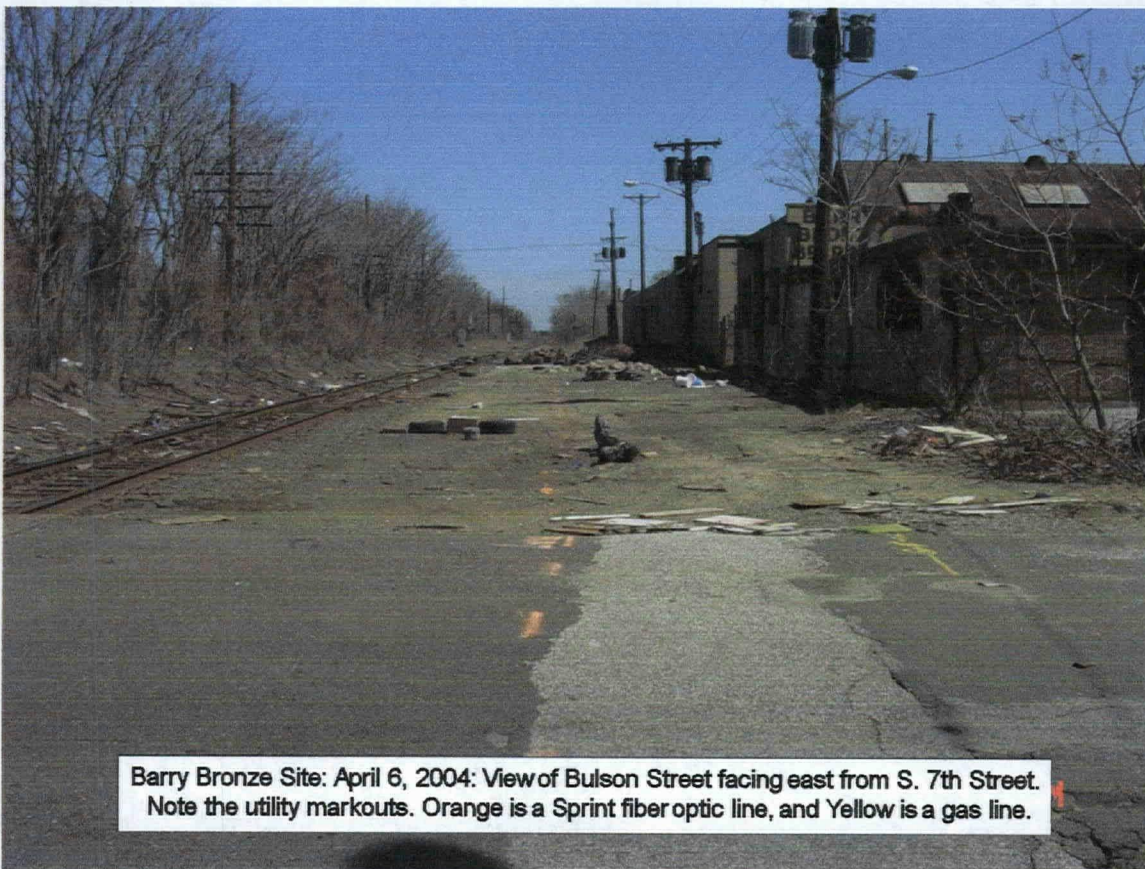


Barry Bronze Site, April 8, 2004: View facing SE from of the intersection of Bulson and S. 7th Streets.



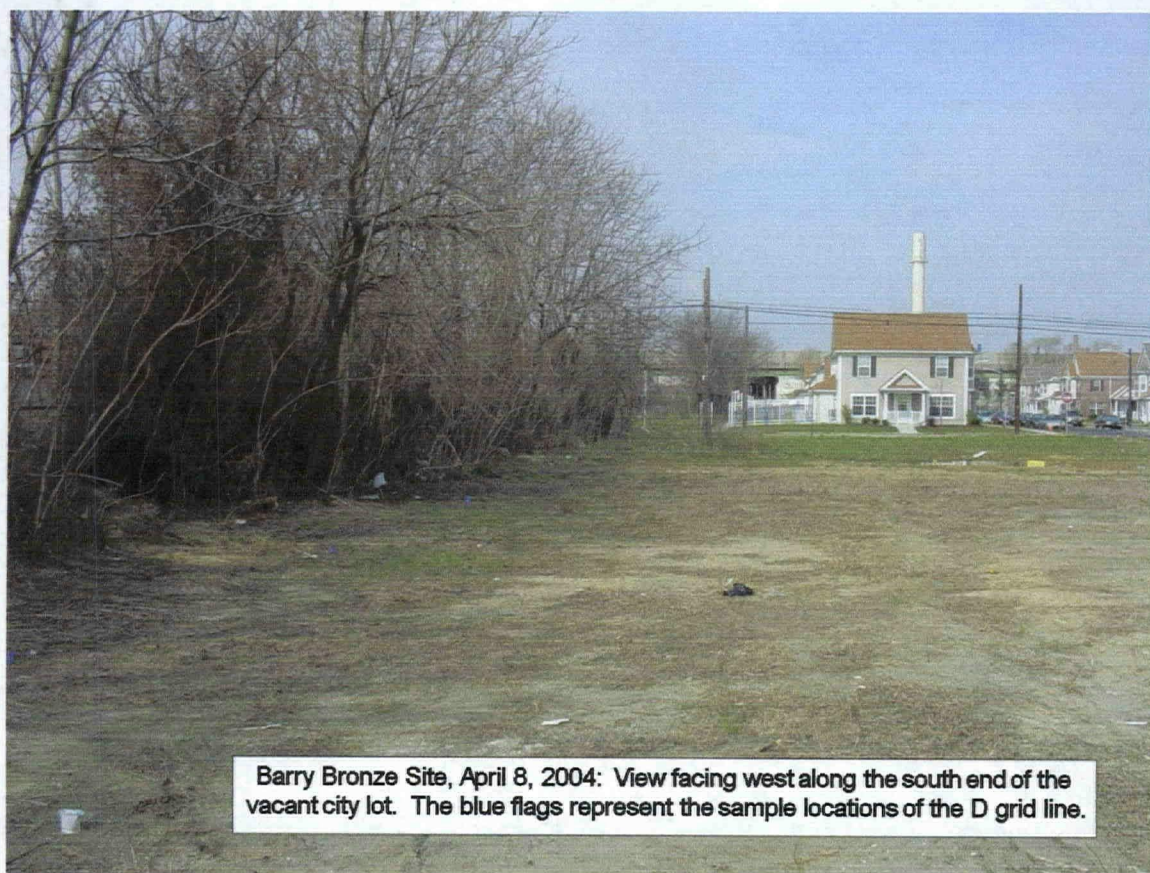
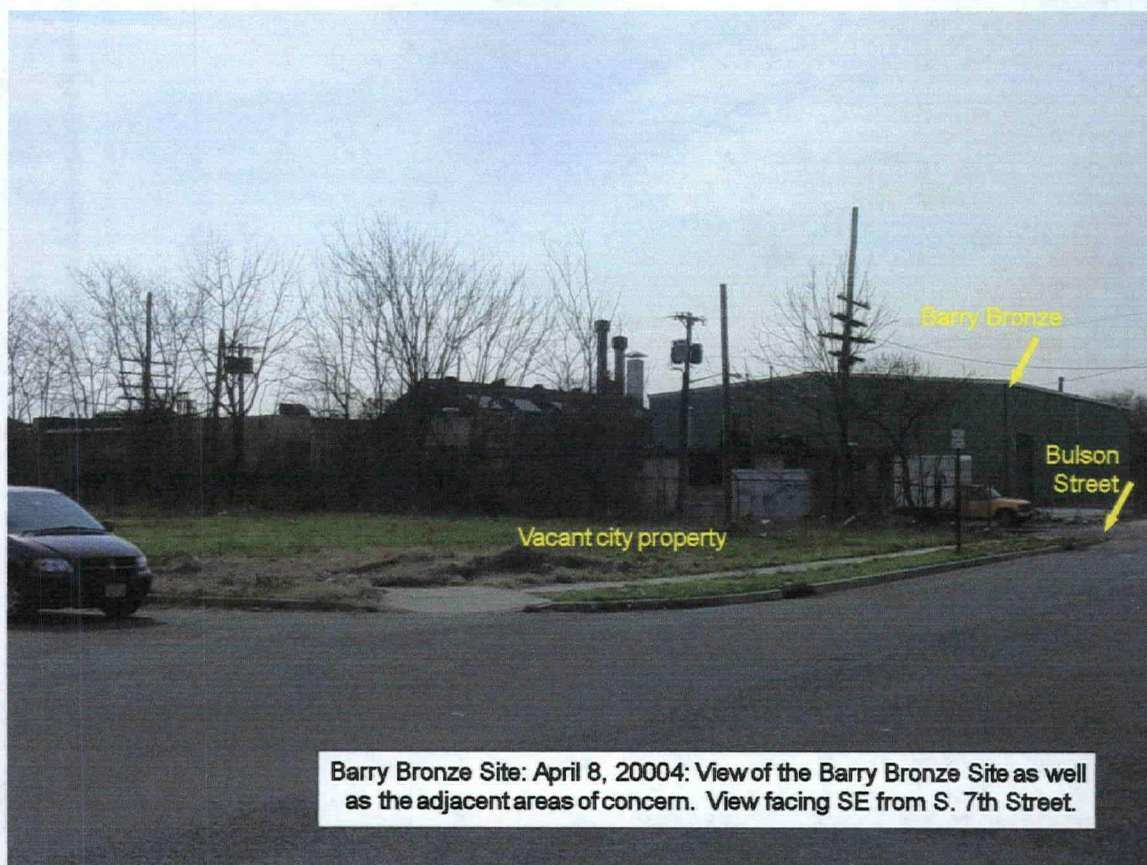


Barry Bronze Site, April 8, 2004: View facing NE of the Barry Bronze facility from the intersection of S. 7th Street and Florence Street.

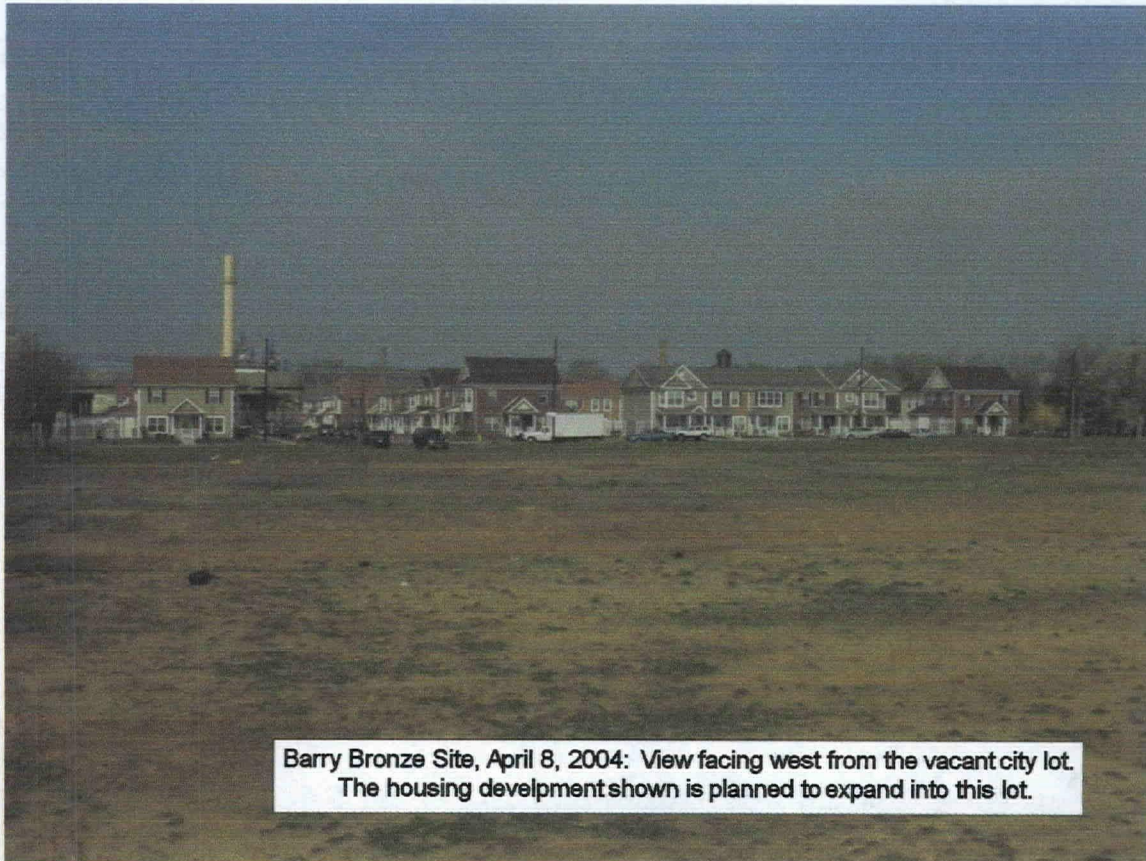


Barry Bronze Site: April 6, 2004: View of Bulson Street facing east from S. 7th Street. Note the utility markouts. Orange is a Sprint fiber optic line, and Yellow is a gas line.

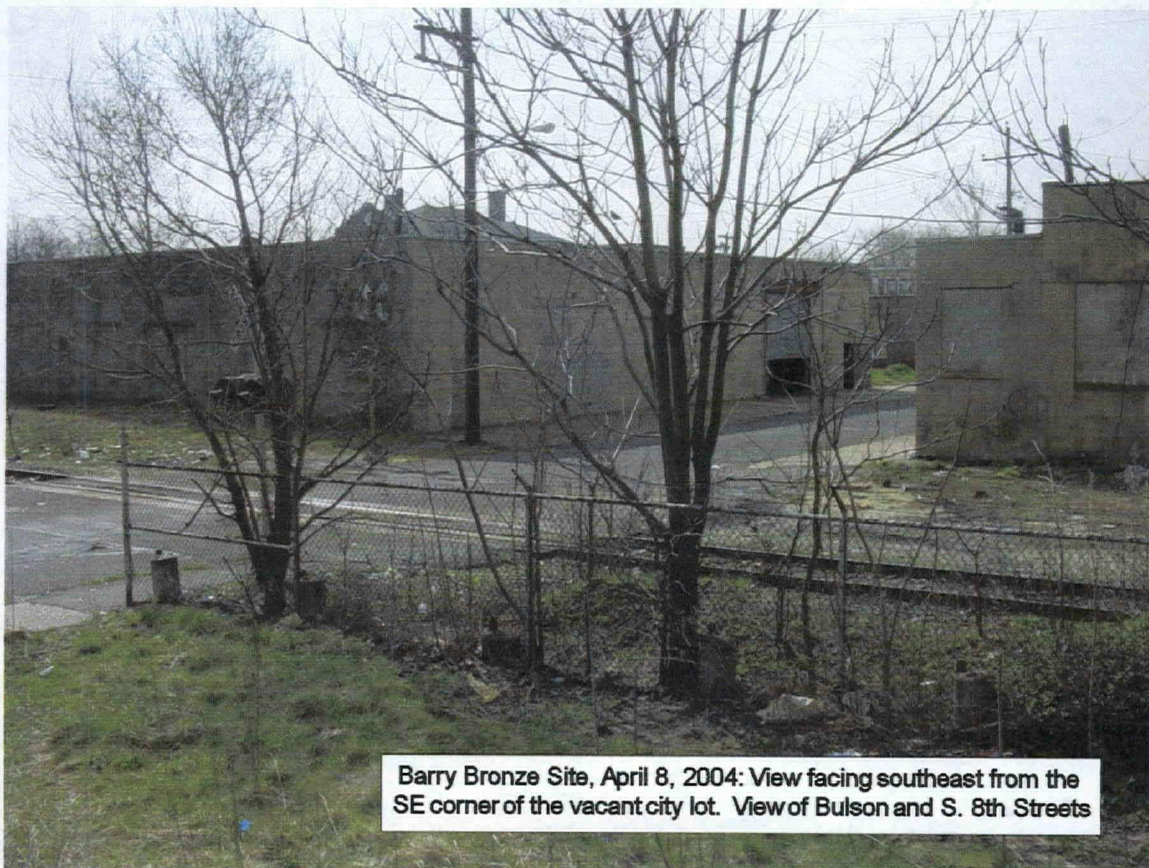






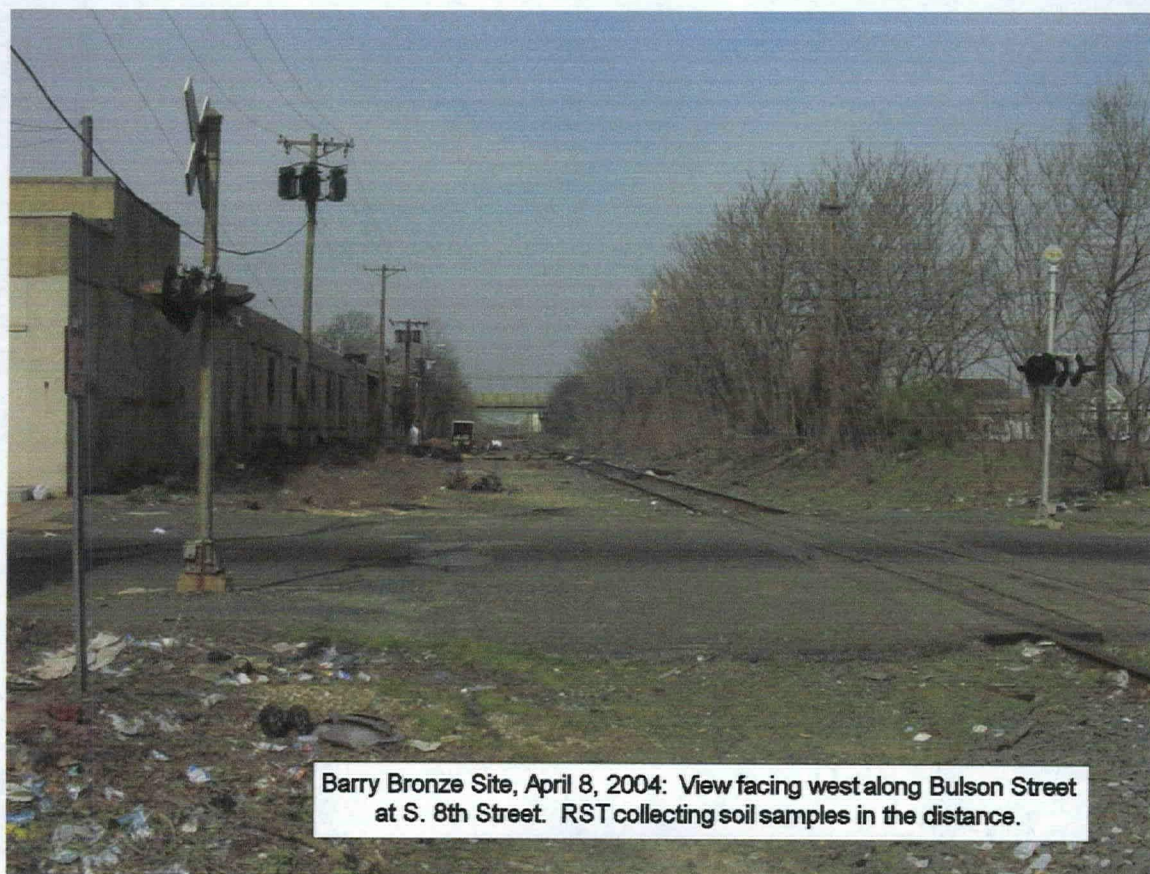
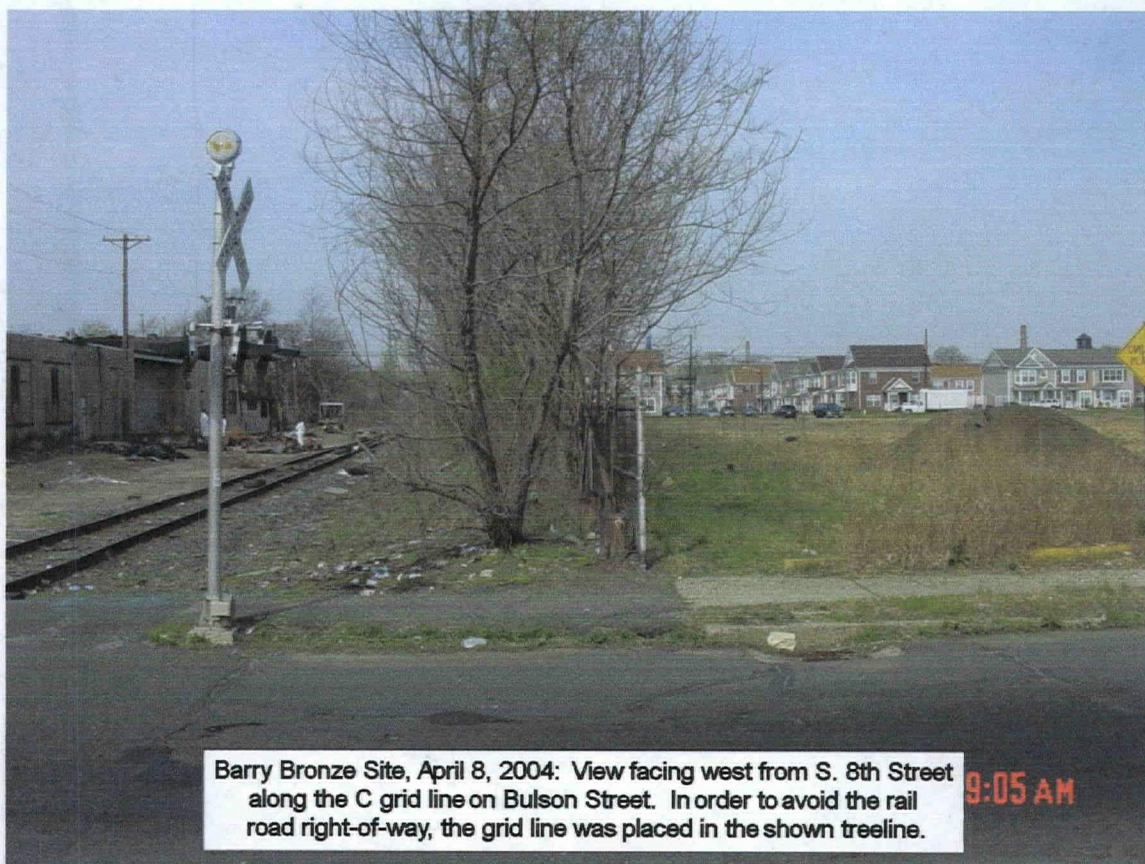


Barry Bronze Site, April 8, 2004: View facing west from the vacant city lot. The housing development shown is planned to expand into this lot.

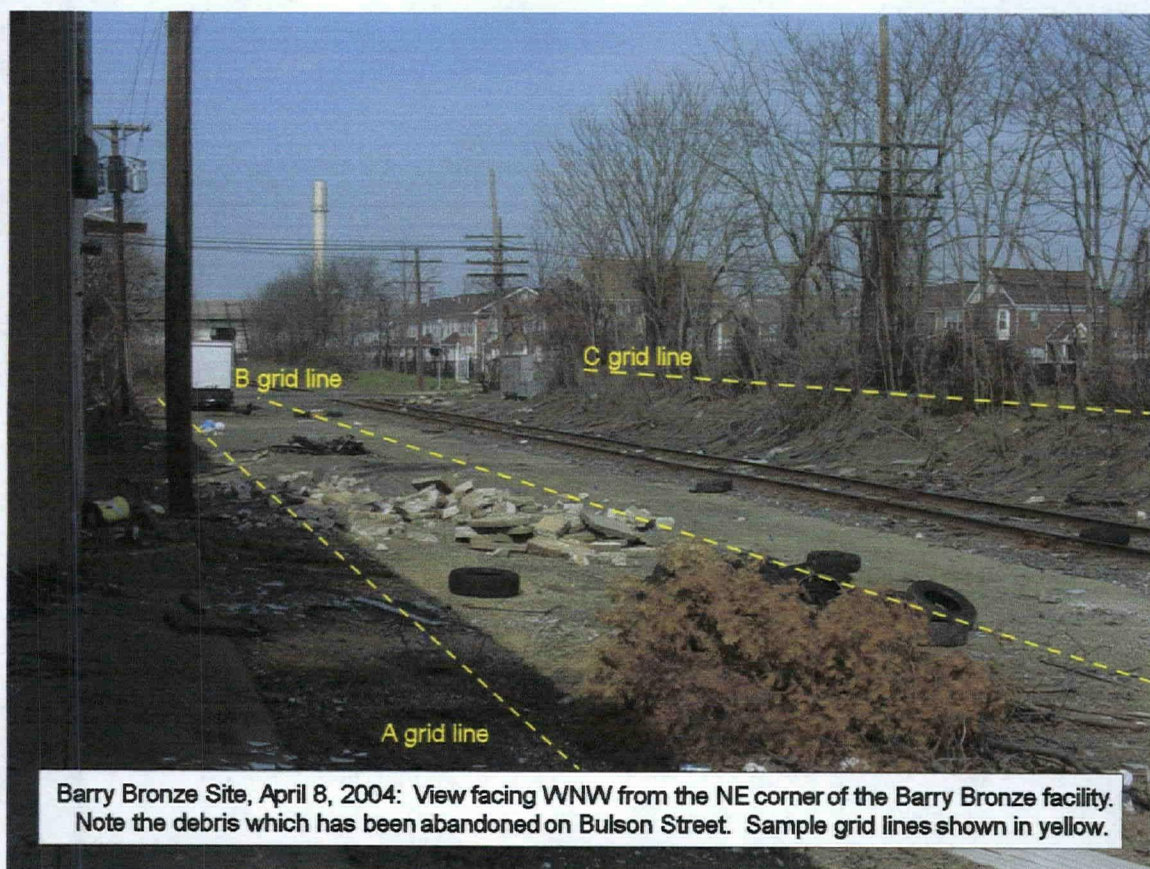


Barry Bronze Site, April 8, 2004: View facing southeast from the SE corner of the vacant city lot. View of Bulson and S. 8th Streets









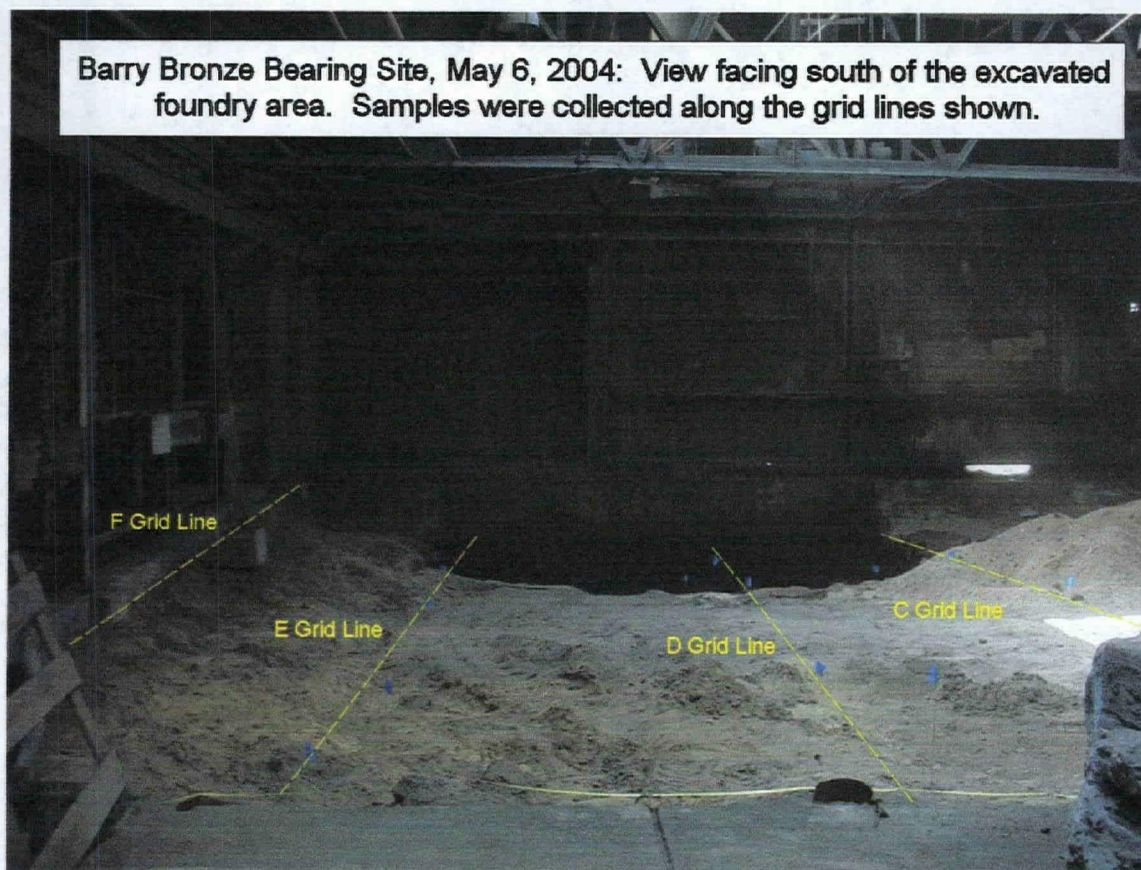
Barry Bronze Site, April 8, 2004: View facing WNW from the NE corner of the Barry Bronze facility. Note the debris which has been abandoned on Bulson Street. Sample grid lines shown in yellow.



**Barry Bronze Bearing Site, May 6, 2004: View facing south of the foundry. Note the heavy dust in the air due to work being conducted in the area.**

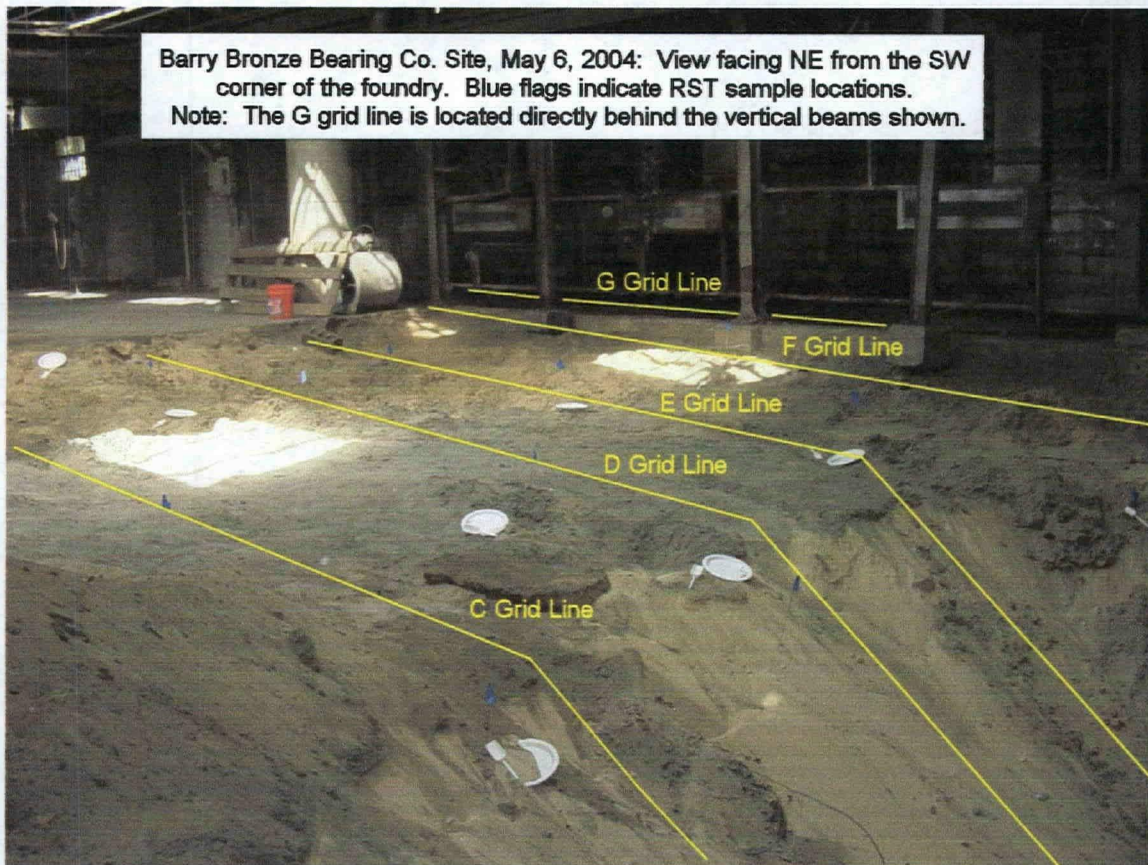


**Barry Bronze Bearing Site, May 6, 2004: View facing south of the excavated foundry area. Samples were collected along the grid lines shown.**

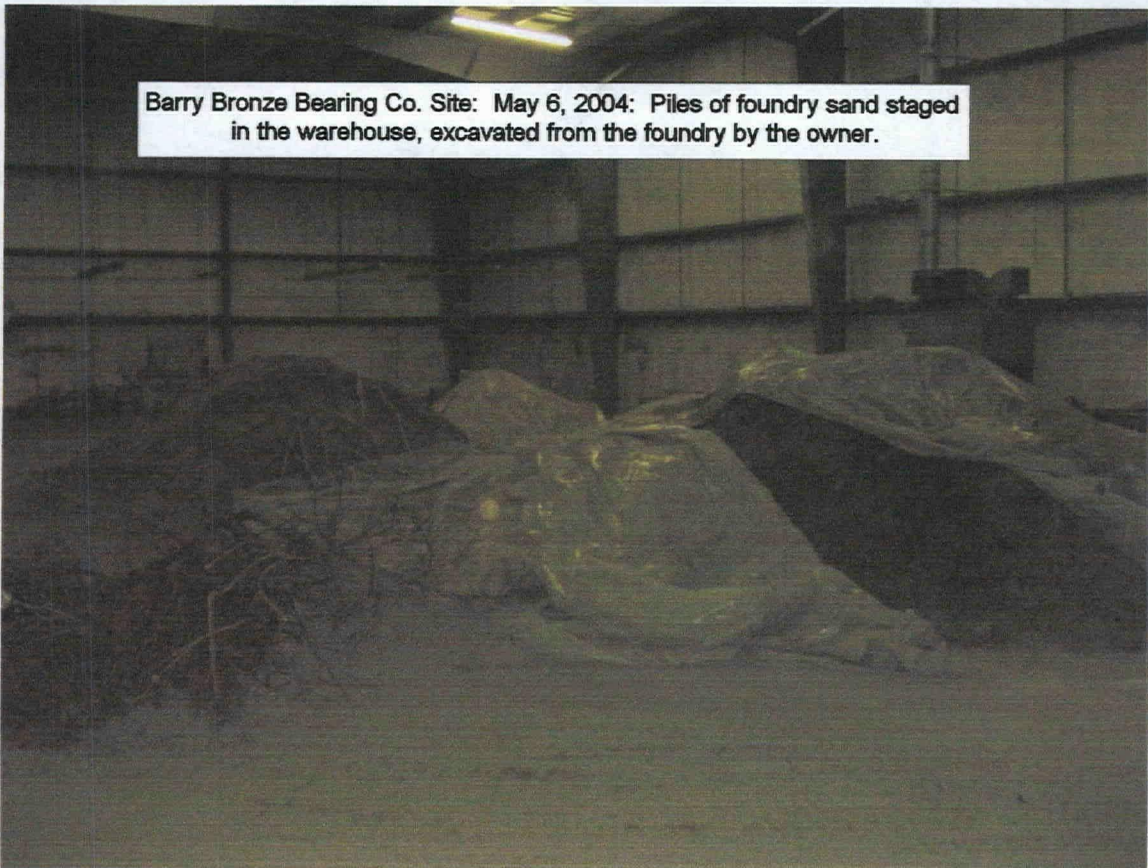




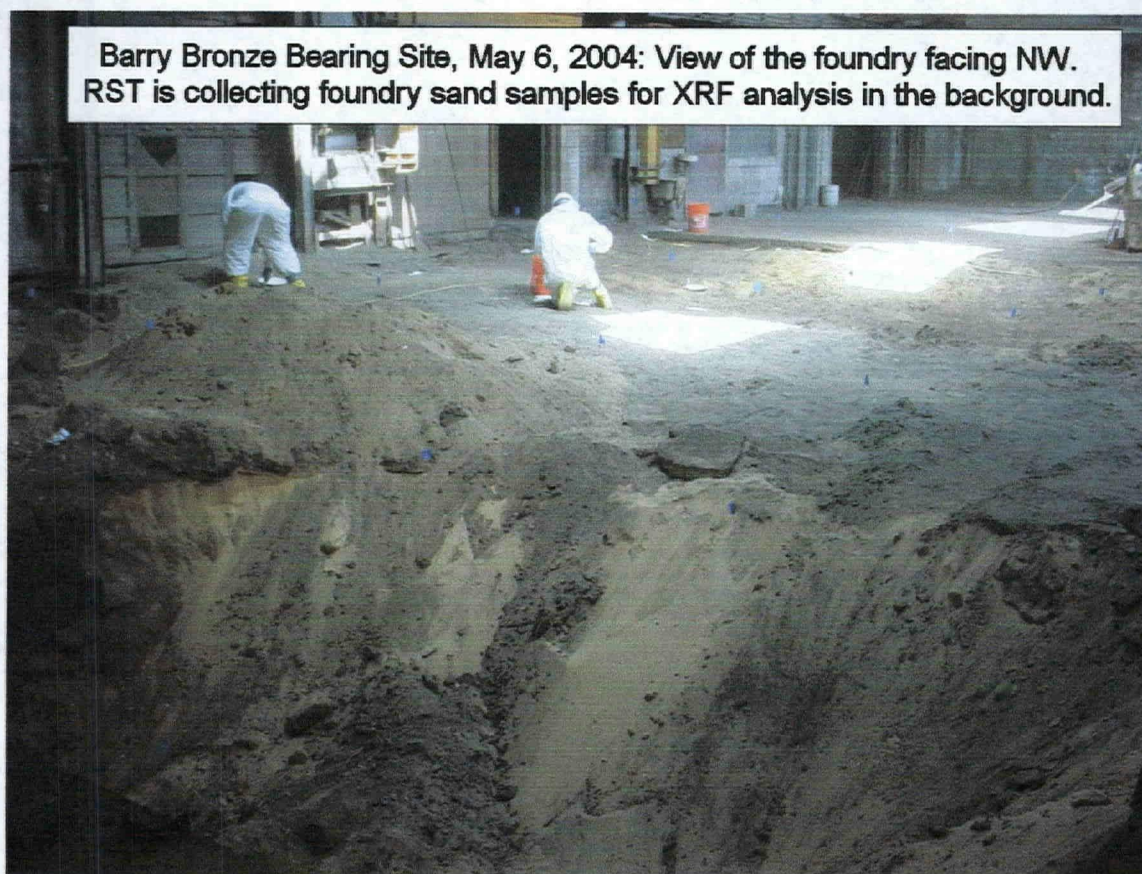
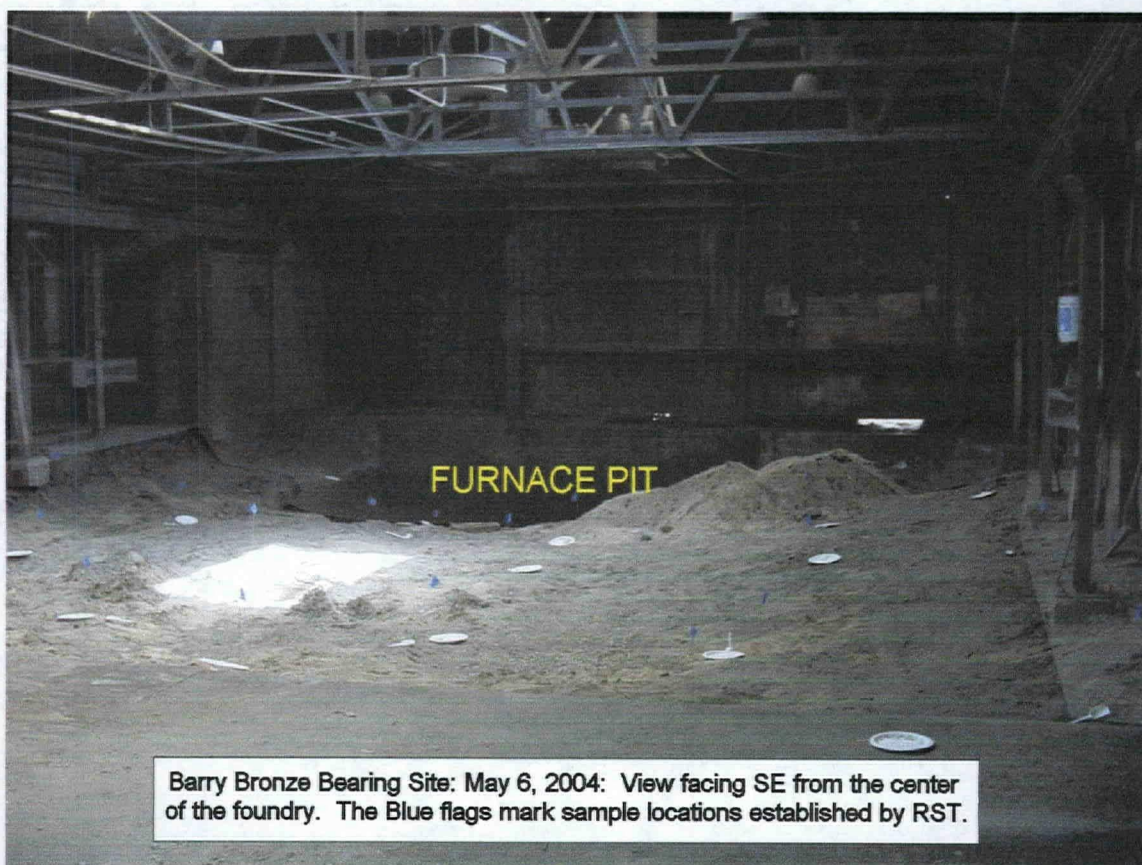
Barry Bronze Bearing Co. Site, May 6, 2004: View facing NE from the SW corner of the foundry. Blue flags indicate RST sample locations.  
Note: The G grid line is located directly behind the vertical beams shown.



Barry Bronze Bearing Co. Site: May 6, 2004: Piles of foundry sand staged in the warehouse, excavated from the foundry by the owner.

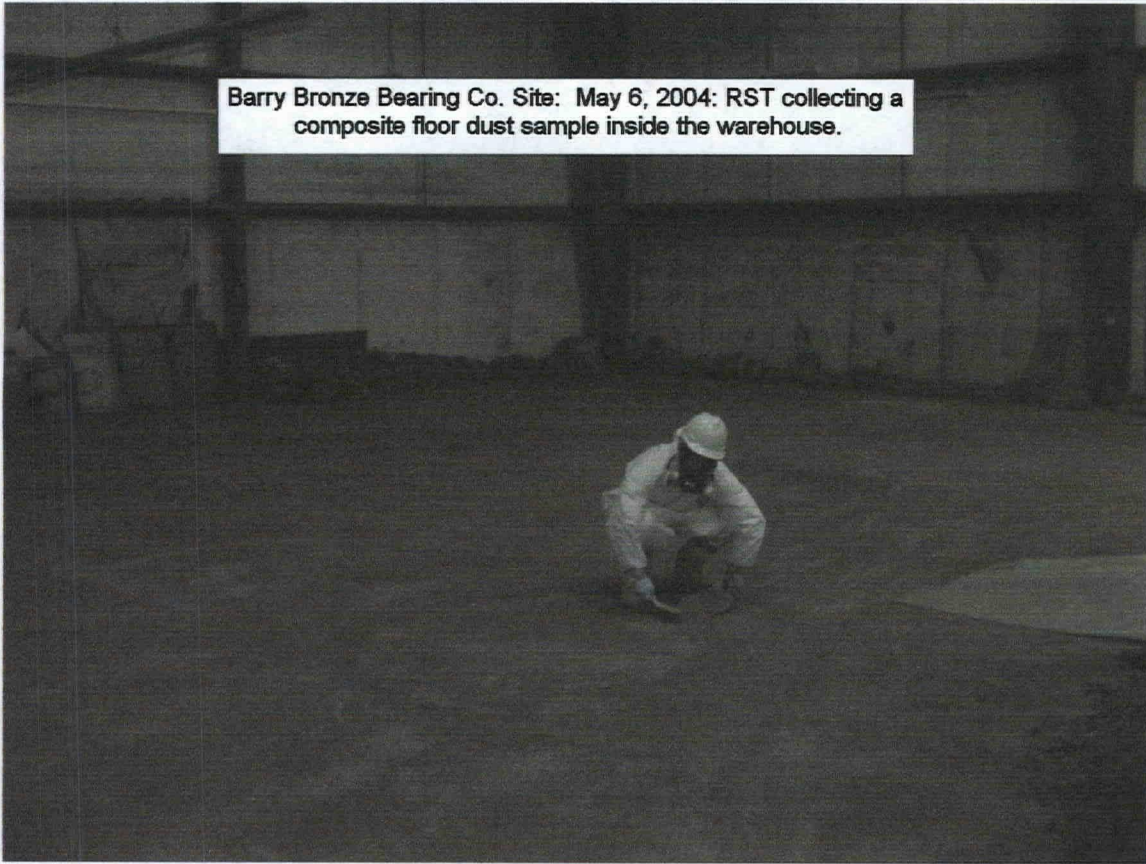




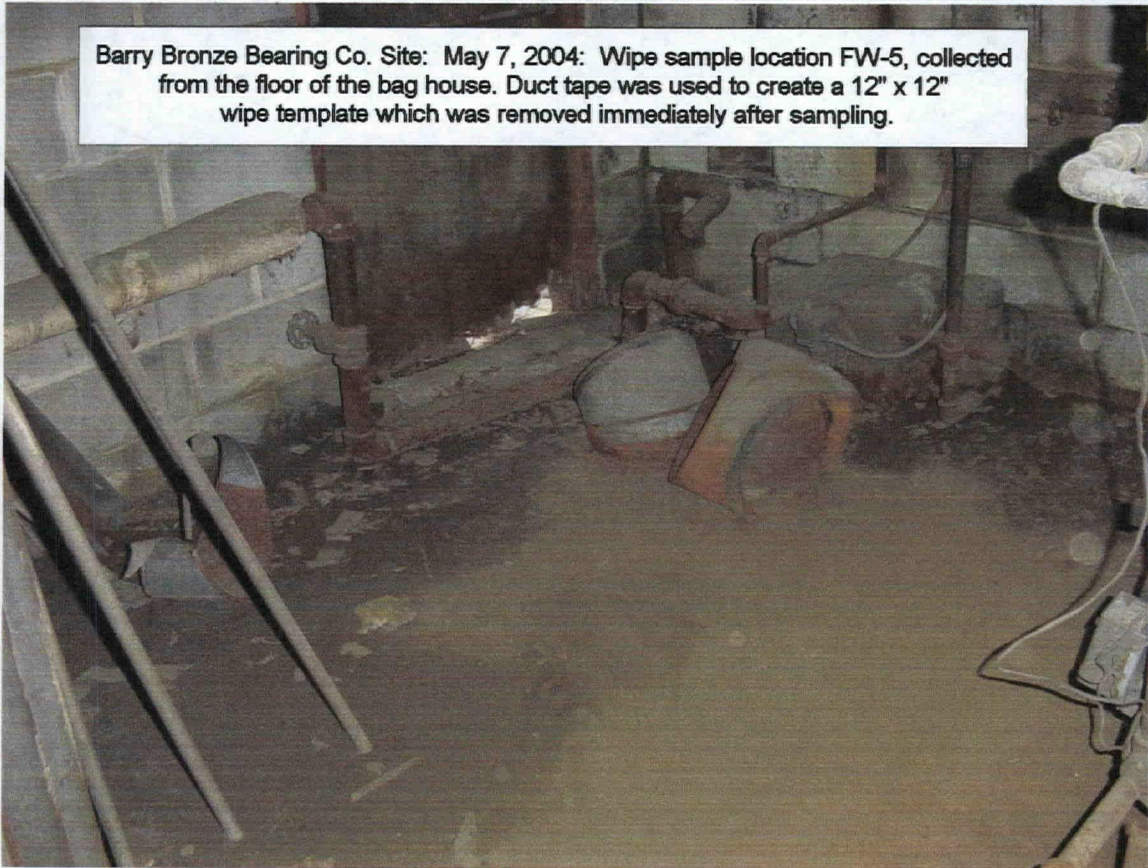




Barry Bronze Bearing Co. Site: May 6, 2004: RST collecting a composite floor dust sample inside the warehouse.

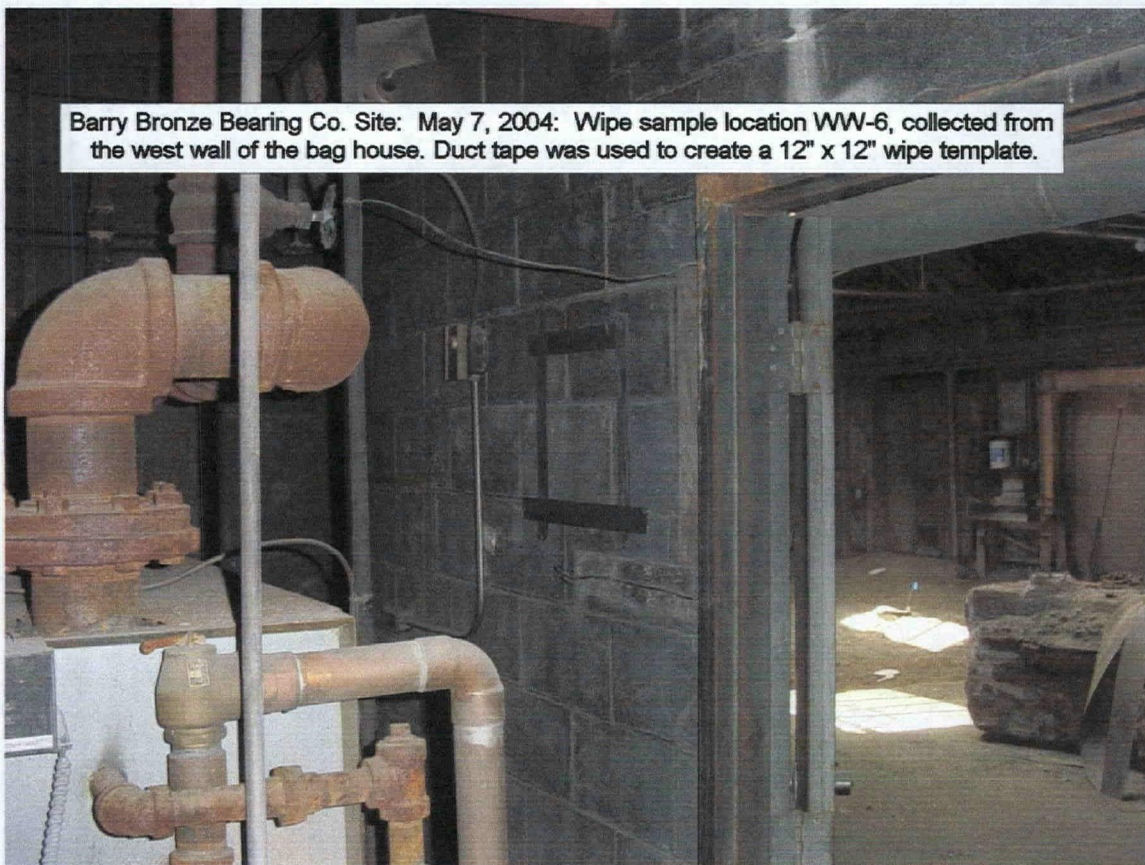


Barry Bronze Bearing Co. Site: May 7, 2004: Wipe sample location FW-5, collected from the floor of the bag house. Duct tape was used to create a 12" x 12" wipe template which was removed immediately after sampling.





Barry Bronze Bearing Co. Site: May 7, 2004: Wipe sample location WW-6, collected from the west wall of the bag house. Duct tape was used to create a 12" x 12" wipe template.





Barry Bronze Bearing Co. Site: May 7, 2004: View of XRF sample cups as they were collected from the foundry surface. Note the color change in the C,D,E 5-7 cups. These samples were collected in the furnace pit and yielded significantly lower lead concentrations than the surrounding darker sand.

